CLINICAL STUDY COMPARING IMMEDIATE INTRA CAESAREAN IUCD INSERTION AND EXTENDED POSTPARTUM IUCD INSERTION IN CAESAREAN DELIVERIES

Dissertation submitted

In partial fulfillment of the regulations
For the award of the degree of

M.S. DEGREE EXAMINATION
BRANCH-II OBSTETRICS AND GYNECOLOGY

Department Of Obstetrics and Gynecology
CHENGALPATTU MEDICAL COLLEGE AND HOSPITAL
CHENGALPATTU-603001

THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY
CHENNAI-32

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CERTIFICATE

This is to certify that this dissertation entitled **"CLINICAL STUDY COMPARING IMMEDIATE INTRA-CAESAREAN IUCD INSERTION AND EXTENDED POSTPARTUM IUCD INSERTION IN CAESAREAN DELIVERIES"** is the bonafide work done by **Dr. R.GEETHA LAKSHMI,** Post Graduate student (2011 – 2014) in the Department of Obstetrics and Gynecology, Chengalpattu Medical College and Hospital, Chengalpattu under the direct guidance and supervision and in partial fulfillment of the regulations laid by the Tamil Nadu Dr. M.G.R Medical University, Chennai for **M.S Branch II OBSTETRICS AND GYNECOLOGY, Degree Examination April 2014.**

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DECLARATION

I, **DR R.GEETHA LAKSHMI** solemnly declare that the dissertation titled "**CLINICAL STUDY COMPARING IMMEDIATE INTRA CAESAREAN IUCD INSERTION AND EXTENDED POSTPARTUM IUCD INSERTION IN CAESAREAN DELIVERIES**" is a bonafide work done by me at Chengalpattu Medical College and hospital during the year 2012-2013 as a follow up study under the guidance and supervision of my Prof. DR.M.S. SORNAM MD.DGO.,

This dissertation is submitted to The Tamil Nadu Dr. M.G.R. Medical University, Chennai, towards the partial fulfillment of the requirement for the award of M.S. (Obstetrics and Gynecology), degree Examination to be held in April 2014.

Place: Chengalpattu

Date: **Dr. R.GEETHA LAKSHMI**

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ABSTRACT

Introduction: In India, Ministry of health and family welfare emphasis on postpartum Cu-T380A insertion which has the advantage of high motivation, safety and convenience for both patients and the service provider. Here we conducted a pilot clinical study comparing intra-caesarean Cu-T380A insertion and interval insertion in caesarean deliveries. **Materials and Methods:** A systematic study with 150 patients in each group recruited clients alternately. Group A intra-caesarean insertion and Group B interval insertion in caesarean deliveries. The cases were followed up at 6weeks and 6months post-insertion with a set of parameters. Here we look for Missed strings, Expulsion and Infection rate as the primary outcome measures. Complications as the secondary outcome measures. **Results:** Infection rate is found to be higher in Group A(2.3%) than Group B(1.6%) p=1.000 at 6^{th} week. At 6^{th} month, infection is higher in Group B (1.8%) than Group A(0.9%) p=0.617. Missed strings are found to be higher in intra-caesarean than interval method both at 6^{th} week and 6^{th} month follow up p=0.00 and p=0.00 respectively, hence significant. Expulsion rate is found to be higher in Group A(2.5%) than Group B(1.7%) p=1.000 at 6^{th} week. At 6^{th} month there is no IUCD expulsion in Group A (0%) than in Group B where there is (1.9%) expulsion p=0.497.There is no complications such as uterine perforation and contraceptive failures in both groups during the study period. On statistical

analysis, it is found that there is no significant difference in infection and expulsion rate between the groups. For missed strings there is a significant difference between the groups with more missed strings in intra-caesarean method.**Conclusion:** To conclude that, intra-caesarean method is equally effective as interval method without any added complications for contraception in caesarean deliveries, with added advantage of high motivation, good compliance, and safety and easy for provider to deliver the services.

INTRODUCTION [2]

The approach to contraception has often been manipulated and constrained by forces from outside the medical community includes social, religious, and political groups have been particularly intrusive and coercive in the area of family planning. Government of India, as part of Family Planning, introduced Cu-T380A in 2002 by replacing the previous Cu-T 200.The acceptance of (IUCD) continues to remain less than 2%, out of the total CPR of 48.5%.[2]

National Population Policy 2000 aims to attain a stable population, gender and demographic balance by 2045 by providing affordable and quality health care. Providing quality contraception services to women is one of the cornerstone for MDG goals of improved maternal and child health.[1,2]

Unwanted and mistimed pregnancy results in adverse outcomes for both mother and child. A large proportion of women in the postpartum period want to accept a contraception method to regulate their fertility either by spacing or limiting future pregnancies.

Accordingly, the postpartum family planning services need to be strengthened and the providers are to be updated on recent developments in contraceptive services. Postpartum IUCD is an important step towards reducing the unmet need for contraception in the post- partum period and for promoting maternal and child health.[2]

Access to safe and effective contraceptive services in the postpartum period is of utmost importance for a woman to prevent unwanted / mistimed pregnancy. Immediate postpartum insertion of IUCD is being seen as an effective and safe contraception which can be accepted by the woman immediately after delivery.[1,2]

Out of a variety of contraceptive methods with variable effectiveness our study deals with postpartum insertion of Intrauterine device (IUCD) Cu-T 380A.Here the question arises,

Why postpartum IUCD insertion?

Why not interval insertion?

Earlier it was found that Postpartum IUCD Insertion was associated with higher rates of infection and expulsion rate. It is more when insertion is between 72hrs and up to6weeks after deliveries. But recent studies had showed decreased rate of infection and expulsion rate when insertion is accomplished Postpartum within 48hrs following deliveries. Hence in this study postpartum IUCD insertion stands its position.[1,2,3]

AIMS AND OBJECTIVES

AIM OF THE STUDY

Clinical study to assess the acceptability, effectiveness and safety of immediate intra-caesarean IUCD insertion compared with extended postpartum (Interval) IUCD insertion in caesarean deliveries.

OBJECTIVES

1. To study the age distribution, parity acceptance, education status complications and removal rates of intra-caesarean and interval IUCD insertion in caesarean deliveries.

2. To assess the Missed string rate between intra-caesarean and interval IUCD insertion in caesarean deliveries.

3. To assess the Expulsion rate between intra-caesarean and interval IUCD insertion in caesarean deliveries.

4. To assess the Infection rate between intra-caesarean and interval IUCD insertion in caesarean deliveries.

REVIEW OF LITERATURE

REVIEW OF LITERATURE

ANATOMICAL CHANGES OF POSTPARTUM UTERUS AND CERVIX

After delivering the placenta the uterine fundus reach the level of umbilicus. The postpartum uterus weighs 1 kg. and measures length of about 25-30 cm from cervix to uterine fundus. During the immediate postpartum, the uterine contractions will be regular, and co-ordinated. The intensity and frequency of uterine contractions will be reduced after a day postpartum. The postpartum uterus forms a smooth cavity with both anterior and posterior wall apposing which measures 4-5 cm thick. The walls of the uterus are soft which may subject to perforation. Lower uterine segment is contracted in immediate postpartum period. This changes in uterus made the provider to be mistaken that they reached the uterine fundus resulting in expulsion in PPIUCD insertion in vaginal deliveries. By the fourth week, uterus is well involuted and become a pelvic organ. Cervix will be collapsed, and later contracts. Upto 48 hours after delivery, PPIUCD can be inserted with kelly's placental forceps easily following a vaginal delivery.

HISTORY OF IUCD: [5,9.10]

The history of IUCDs dates back to early 1900s. The first IUCD was developed by Dr. Richter of Walden burg. The device was made of silkworm gut.

Dr. **Ernst Grafenberg** created the first Ring IUCD called Grafenberg's ring. It is made of silver. Along with Dr.H.Hall and Dr. M. Stone, he created Hall Stone ring made of stainless steel.

The history of lippes loop dates back to 1950, coined after Dr Jack Lippes. Lippes loop is made of thermoplastic, which can bend for insertion. He also added the nylon string to the loop for its easier removal.Later, the Lippes Loop IUCD became most populous IUCD among the first generation IUCDs.

In the year 1960, the term 'T' in copper T is coined after Dr Howard Tatum, which signifies the T shape of the IUCD. This T shape prevents its expulsion when uterus is contracted. Then, he finally discovered the Cu-T380A which is currently the preferred copper IUCD under government of India. Jaime Zipper discovered the spermicidal effect of copper.

TYPES OF INTRAUTERINE DEVICES [3,4,5]

IUCDs that **are *chemically inert*** are composed of a nonabsorbable material, polyethylene, and with barium for radiopacity.eg: **bows, rings, lippes loops,spirals, coils**. Among the above lippes is commonly used first generation IUCDs

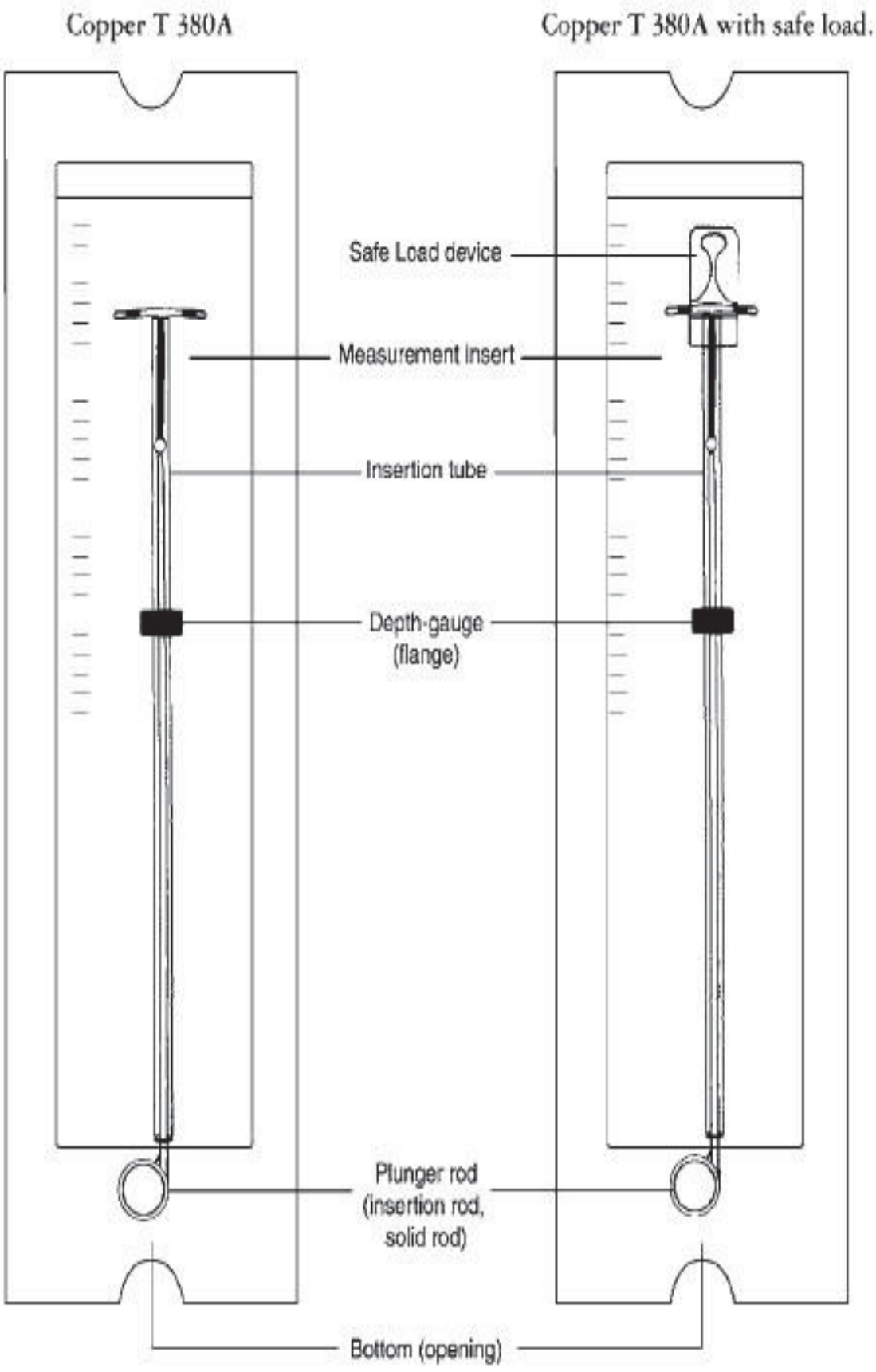
IUCDs that are ***chemically active*** have continuous elution of drug. At the present time, only chemically active IUCDs are available.eg: **COPPER-7,Cu-T 200B,Cu-T 220C,Cu-T 380A, NOVA-T, MULTILOAD Cu250/Cu374.**

The Copper T IUCD 380 A

It is a T shaped IUCD made of polyethylene and with barium sulfate for radiopacity. The vertical arm measures 3.6 cm and horizontal arm measures 3.2 cm. The stem is wound with 314 mm^2 of fine copper wire, and the arms each have 33-mm^2 copper, thus totalling 380 mm^2surface area of copper. The copper in Cu T 380A weighs 176 mg in vertical arm and 66.5 mg of copper in horizontal arm. The small copper bands on the horizontal arm of the T, ensures copper release at high in the fundus of the uterus.

A thin white string, made of polyethylene is attached at the bottom of the stem through a 3 mm ball on the stem. The string is meant for easy removal, and the ball is to prevent cervical perforation.

CuT 380A is the IUCD , that is supplied from Government of India from the year 2002. CuT 380A is available in a pre-packed with a loader. CuT 380A is used in the postpartum IUCD insertion.


Copper T 380A
Copper T 380A with safe load.
Safe Load device
Measurement Insert
Insertion tube
Depth-gauge
(flange)
Plunger rod
(insertion rod,
solid rod)
Bottom (opening)

MECHANISM OF ACTION [3,6]

These mechanisms have not been defined precisely and are the subject of ongoing controversy.

- IUCD creates a foreign body milieu in the uterine cavity rendering the spermatozoa immobile or difficult in motion.
- A foreign body within the uterus provokes uterine contractility through prostaglandin release and increases the tubal peristalsis so that the fertilized egg is propelled down the fallopian tube more rapidly before the endometrium is receptive and so preventing from implantation
- Interference with successful implantation of the fertilized ovum, which at one time was believed to be the main mode of action, is less important than prevention of fertilization.
- The presence of Cu T causes local inflammatory response in the uterus, especially,lysosomal activation and other inflammatory actions that are spermicidal.
- If unlikely,fertilization does occur, the inflammatory reaction damages the blastocyst.
- The endometrium becomes unfavourable environment for implantation.

EFFECTIVENESS [1,2,5]

Cu T 380A IUCD is a long term, reversible method of contraception. Its effective life is upto 10 years from the date of insertion. IUCD has 1-year continuation rates higher than that of oral contraceptives. Their effectiveness is similar overall to that of tubal sterilization. Importantly, the unwanted pregnancy rate will decreases gradually after the 1st year of use. Average annual failure rate (Pregnancy rate) was 0.4%(0.5 % – 0.8 %). Average cumulative failure rate over 12 years is 2.2%.

Expulsion rate and removal rate of CuT 380 A is 5% and 14% respectively.

THE TIMING OF INSERTION OF IUCD: [1]

I: IMMEDIATE POSTPARTUM:

- **Postplacental:** Insertion within 10 minutes after expulsion of the placenta following a vaginal delivery.
- **Intracaesarean:** Insertion during a caesarean delivery, after removal of the placenta and before closure of the uterine incision.
- **Within 48 hours after delivery:** Insertion within 48 hours of delivery and before discharge from the postpartum ward.

II: POSTABORTION: Insertion following an abortion, if there is no infection, bleeding or any other contraindications.

III: EXTENDED POSTPARTUM / INTERVAL: Insertion any time after 6 weeks postpartum.

INSERTION TECHNIQUE:

For Intracaesarean insertion: After removing placenta in-toto. The uterus is inspected for any malformations which would limit the use of IUCD. Ensured that the nurse has opened IUCD on the sterile field. Uterus stabilized by grasping it at fundus. The IUCD is introduced through the uterine incision and placed at the uterine fundus. This is done manually between two fingers. No attempt is made to pass the strings of the IUCD through the cervical os before closure of the uterus. Instead the strings can be pointed towards the cervix and leave it lower down in the uterine cavity. This is to prevent uterine infection by contamination of the uterine cavity with vaginal flora, and to prevent displacement of the IUCD from the fundus by drawing the strings downward toward the cervical canal. **Care should be taken during closure of the uterine incision that the strings of the IUCD do not get included into the suture.[1]**

For Interval IUCD insertion (Withdrawal technique) First rule out any contraindications, then counsel the woman regarding various problems associated with IUCD use. Obtain written informed consent. A non-steroidal anti-

inflammatory agent is given. Under aseptic precaution pelvic examination is done. Size and position of the uterus is identified. Any adnexal pathologies to be ruled out and should be evaluated if abnormalities are present. If any abnormal Mucopurulent discharge is present should be treated before IUCD insertion. Under aseptic precaution perineal parts painted and drapped with povidone iodine. Grasp the cervix with vulsellum. The cervical canal and uterine cavity are first straightened by applying gentle traction on the vulsellum. The uterus is sounded to identify the depth and direction of the uterus. No Touch Technique: Open the copper T 380 A partially, then the arms of the T are placed inside the insertion tube by folding the arms. Fix the flange according to utero-cervical length. Align the flange and the folded arms of the T in horizontal position. Insert the IUCD within 5 minutes of loading. Insert the loaded IUCD into the cervical os at appropriate angle and advance it into the uterine cavity till resistance felt. Hold the vulsellum and insertion rod stationary and withdraw the insertion tube till it touches the plunger rod such that IUCD would release into the uterine cavity. Plunger is removed then the insertion tube removed to prevent accidental displacement and expulsion of CuT. The marker tail is cut 2 cm from the external os, vulsellum removed, observed for bleeding from the vulsellum puncture sites, and hemostasis checked speculum removed. The woman is advised to report any apparent adverse effects promptly.

Insertion immediately or very soon after delivery is followed by an unsatisfactorily high expulsion rate. Hence recommendations has been made, therefore, to withhold insertion for at least 8 weeks to reduce expulsion and to reduce risk of perforation. However studies states that, earlier insertion has not led to perforation or expulsion rates significantly higher than for insertion more remote from pregnancy. In the absence of infection, the device may be inserted immediately after early abortion. Our study deal with it. [1,3]

ADVERSE EFFECTS [3,1,2,5]

EARLY

- Uterine Perforation and Abortion
- Uterine Cramping and Bleeding
- Menorrhagia
- Infection

LATE

- Expulsion
- Missed strings
- Pregnancy with device in utero

UTERINE PERFORATION AND ABORTION

The earliest adverse effects are associated with insertion. They include clinically apparent or silent i) *uterine perforation,* occurs while sounding the uterus or during insertion. ii) *abortion of an unsuspected pregnancy.* The frequency of these complications depends on operator skill and the precautions taken to detect pregnancy. Perforations occur at a rate of approximately 1 per 1000 insertions (World Health Organization, 1987). Even though IUCD may migrate itself through the uterine wall, yet perforations are more common at the time of insertion.

UTERINE CRAMPING AND BLEEDING [3]

Cramping and some bleeding are common soon after insertion. These persist for variable periods. Cramping can be minimized by administering a NSAIDS approximately 1 hour prior to insertion. The occasional increase in cramping with menses is controlled in a similar manner.

MENORRHAGIA [5,3,2]

Menstrual blood loss is commonly doubled with use of the Cu-T 380A device, and this may cause iron-deficiency anemia. Most providers measure hemoglobin concentration annually. Menorrhagia is a troubling side effect, and approximately 10 to 15 percent of women using the copper device have it removed because of this problem (Hatcher and associates, 1998).

Spotting per vaginum and mild bleeding per vaginum are the commoner complaints of IUCD insertion which resolves spontaneously in few months. In case of menstrual irregularities, first rule out pregnancy (intrauterine and ectopic), infection and expulsion. Reassure the patient, if the patient is very much worried, give a short course of NSAIDS such as Ibuprofen 200-400 mg TDS. Even then if the complaint persists rule out gynaecological problems. If there is no gynaecological problems and the symptom persists, remove the IUCD. Sometimes, IUCD can cause excess bleeding results in anemia. Menstrual irregularities are the commonest complaints for the removal of IUCD.

INFECTION [3,4,5,]

A variety of pelvic infection, usually polymicrobial can occur due to contamination of the endometrial cavity at the time of insertion. Symptoms and signs are vague abdominal pain, fever, dyspareunia, abnormal or excessive vaginal discharge.

With suspected infection and the patient is not willing to continue the IUCD, remove the IUCD, and the woman must be treated with antimicrobials. If the patient is willing to continue IUCD, leave the IUCD in situ and treat with antimicrobials, if there is no improvement after 72 hours remove the IUCD and continue antimicrobials.[12,14]

The major risk of infection is at the time of insertion and does not increase with long-term use. There is a small increased risk of pelvic infection for up to the first 20 days following insertion. Currently, there is no consensus whether antimicrobial administration at the time of insertion reduces the incidence of infection. Long-term use of current IUCDs is associated with pelvic infection rates comparable with those associated with oral contraceptives.

Any infection after 45 to 60 days should be considered sexually transmitted and treated accordingly.The only pelvic infection that has been unequivocally related to IUD use is actinomycosis [12,14,16]. It appears that PID with actinomycosis has been reported only in women wearing an IUCD.

Rates of colonization with actinomycosis increase with duration of use for plastic devices but appear to be much less for copper-releasing IUCDs.

When PID is suspected in a woman wearing an IUCD, diagnosis is made based on CDC guideline for PID, and antibiotic therapy should be administered. Removal may require if symptoms does not improved after 72 hours of management.

IUCD[3,4,7,6,1]	**TIMINGOF INFECTION**	**INFECTION RATE**	**EXPULSION RATE**
WILLIAMS OG	Within 20 Days		During 1st Month
BEREK&NOVAKS	Within 20 Days	1.9 Relative Risk Of PID	
DANFORTH 9/e	Limited To 20days	1%	5%
SHAWS TXT		2-5%	2-5%
WHO RM2010 PPIUCD		1%	1%

CDC Diagnostic Criteria for Pelvic Inflammatory Disease (PID) [16]

Minimal criteria

- Tenderness in the lower abdomen.
- Cervical tenderness per vaginum.
- Adnexal tenderness per vaginum.

Additional criteria

- Temp>101°F, Abnormal excessive vaginal discharge.
- Presence of WBC on wetmount saline test (> 10/HPF suggest infection)
- Elevated Erythrocyte sedimentation rate., Elevated CRP.
- Lab evidence of cervical infection with (gonoccocal/ chlamydiae)

Definitive criteria

- HPE of endometrial biopsy showing endometritis.
- TVS/MRI showing thick, fluid-filled tubes with or without pelvic abscess or tubo-ovarian mass.
- Laparoscopy evidences consistent with PID.

LATE ADVERSE EFFECT

Expulsion:[3,7,2]

i) Partial
ii) Complete

IUCD can be expelled either partially or completely which may be unnoticed or presenting with symptoms such as irregular bleeding, pain on intercourse, abnormal vaginal discharge, and bleeding after intercourse.

Expulsion is most common during the 1st month. The woman must be instructed to palpate the strings protruding from the vagina in squatting down and then inserting a finger into the vagina until the cervix is reached. The woman should be examined again in about a month, usually after menses, for appropriate placement by identifying the tail protruding from the cervix.

During this period Barrier contraception may be advised.IUCD expulsions occur in about 5% of users. Risk factors for expulsion include young age, nulliparity, and heavy bleeding.

Possible Signs

Complete Expulsion - Expelled IUCD seen

Partial Expulsion - IUCD seen/felt in the cervical canal

MANAGEMENT: [2,1]

- For complete expulsion of the IUCD. Confirm it by USG or by radiograph. If the patient is willing to reinsert IUCD, reinsert it or else provide alternative method of contraception

- For partial IUCD expulsion: Remove the IUCD and replace it if there is no infection or provide any alternative method.

- If the IUCD embedded in cervical canal remove it.

MISSED STRINGS

When the tail of an IUCD cannot be visualized, the device may have been expelled, or it may have perforated the uterus. In either event, pregnancy is possible. Conversely, the tail simply may be in the uterine cavity along with a normally positioned device. Often, gentle probing of the uterine cavity with a long artery forceps or with a terminal hook retrieves the string. **Never assume that the device has been expelled unless it was seen.** [3,2,1]

MANAGEMENT BASED ON FINDINGS:

- Check for strings by speculum examination.
- If strings are able to made out leave it as such if the women wants to continue, if the women is not willing to continue, remove the IUCD.
- When the strings are not visible and the device is not felt by gentle probing of the uterine cavity, ultrasonography can be used to ascertain if the device is within the uterine cavity. If these findings are inconclusive, then x-ray abdomen and pelvis is taken with a sound inserted into the uterine cavity to identify the misplaced IUCD.
- Hysteroscopy is yet another alternative.
- Perforations of large and small bowel and bowel fistulas, with attendant morbidity, have been reported remote from insertion. An extrauterine copper-bearing device induces an intense local inflammatory reaction and adhesions. Chemically inert devices usually are removed easily from the peritoneal cavity by laparoscopy. Copper-bearing devices are more firmly adherent, and laparotomy may be necessary.

PREGNANCY WITH IUCD IN SITU [1,2,5]

About 1/3rdof IUCD related conceptions are due to undetected partial or complete expulsion of the IUCD.

Possible Signs and Symptoms includes

I) Missed periods

II) Urine pregnancy test positive

III) Missing string

IV) Short or long strings than usual.

The IUCD users were 50% less likely to have an ectopic pregnancy when compared with women no using contraception. Ectopic pregnancy rate seen with Cu-T 380 A is 0.20 which is the lowest among various IUCDs.

Management

- Confirm pregnancy and trimester. If the woman is in her second or third trimester of pregnancy, managed according to national guidelines.
- Rule out ectopic pregnancy if she complaints of pain which may be unilateral associated with abnormal vaginal bleeding, light headedness, giddiness.

❖ If ectopic pregnancy is suspected, proceed to appropriate management.

❖ After ruling out ectopic pregnancy ,:

1. If the pregnancy is in the first trimester, counsel the woman on the benefits and risks of immediate removal of the IUCD. The IUCD removal may increase the risk of abortion in 1st trimester and keeping the IUCD in place can cause abortion in second trimester, infection and preterm baby.

2. If the woman wants IUCD to be removed, proceed if the strings are visible. If the strings are not visible, confirm with USG and if it is in-situ, leave it.

3. If the woman declines removal, provide ANC care as per national guidelines and arrange close monitoring of the pregnancy. Counsel the importance of returning to the clinic immediately if she experiences signs of spontaneous abortion or infection any other warning signs. Ensure that IUCD is removed at delivery.

CONTRAINDICATIONS FOR IUCD INSERTION [3,5]

GENERAL Pregnancy or h/o amenorrhoea
Uterine anomalies. Acute PID or a history of PID
Postpartum endometritis or septic abortion in the past 3 months Known or suspected lower genital tract malignancy. If the patient has multiple sexual partners Bleeding p/v of unknown etiology
Acute lower genital tract infection, as well as bacterial vaginosis, until infection is controlled
Conditions associated with increased susceptibility to infections with microorganisms. Genital actinomycosis IUCD in-situ

SPECIFIC **Cu-T 380A** is contraindicated (because of its copper content): Wilson disease Copper allergy

WHY POSTPARTUM FAMILY PLANNING? [1]

A. Maternal and Child Health

Baby born after a short birth interval has increased chances of:

- Pre-term, being small for gestational age, death during newborn period or childhood

Woman who conceives soon after a previous delivery or spontaneous or induced abortion faces higher risks of:

- Anaemia, abortion, premature rupture of membranes, maternal mortality

B. Unmet need for birth spacing [1]

- Unmet need for family planning in India is 65% during the first year postpartum but only 26% of women are using various method of family planning during the 1styear postpartum.
- 8% of the women desire to have another child within the next 2 years after giving birth and are vulnerable to the risks of early pregnancy.

C. Return of fertility [1]

- **Exclusive breastfeeding:**

More than 55% of women exclusively breastfeed their babies in the first three months following delivery, this rate drops to nearly zero by one year and this exposes them to risk of pregnancy.

- **Partially breastfeeding or not breastfeeding:**

Women may resume menses within 4-6 weeks of delivery and first ovulation may occur as early as 45 days postpartum thereby increasing the risk of pregnancy soon after childbirth.

- **Lactational Amenorrhea**:

Some women may experience amenorrhoea during breast feeding even if they are not practicing exclusive breast feeding or do not satisfy the three criteria of Lactational Amenorrhea Method (LAM). There is a probability

that ovulation may occur before the return of menstruation. Therefore, amenorrhea after child birth is an unreliable indicator that a woman is protected against pregnancy.

- **Return to sexual activity** during the first year postpartum, approximately 40% women return to sexual activity within the first three months and by 10-12 months postpartum 90% have resumed sexual activity which exposes the woman to risk of having an unintended pregnancy. The period after three months, when exclusive breastfeeding is falling, menses is returning and couples resume sexual activity, can be considered a period of high risk of an unintended pregnancy. Couples will not necessarily see themselves at risk of pregnancy at this time and will not fully recognize the need for family planning.

- **Following an abortion,** a woman's fertility returns within 10–11 days. Women who have experienced a spontaneous or induced abortion should begin use of a contraceptive method within 48 hours to prevent an unintended pregnancy.

ADVANTAGE OF POST PARTUM CONTRACEPTION

1. Convenience

   This method is convenient for the women since the woman leave the hospital with a method of contraception and she need not to return back to the hospital for the same. It is also convenient for the provider to insert the IUCD on the delivery table by using the same instruments for delivery.

2. Safe and easy

   Immediate postpartum will ensure that the patient is not pregnant and the IUCD can be placed safely.

3. Womens need.

   Many studies shown that the woman are willing to use postpartum contraception.

4. Healthy mother and baby

The recommended interval between two pregnancies is 24 months. The spacing should be adequate to reduce the perinatal, maternal and infant complications.

5. Cost benefit

It is cheap and cost effective for the government of India to meet the unmet need for family planning.

6. Reduces Lost follow up rate:

Many patients motivated for interval insertion of IUCD at the time of delivery may not return back due to some social reasons. Obstacles for insertion is lack of skills in postpartum insertion and patients having difficulty in returning back for IUCD insertion.

COUNSELLING FOR POSTPARTUM IUCD INSERTION

1. Patient must be counseled during antenatally, along with her husband or partner. This is the best time for contraceptive counseling because the women is free in stress of labour. But counseling for contraception antenatally, made the couple to worry about future issues and babies health, but this will be overcome by proper counseling.
2. Patient may be counseled at the time of early labour, because at this time patient can give informed consent with her own decision. But in early labour, patient will be more worried of outcome of delivery and may not think for contraception.
3. Patients should not be counseled during the active stage of labour. Because at that stress, patient may give consent without her willingness.
4. For elective caesarean deliveries, patient may be counseled antenatally.
5. For emergency caesarean deliveries, patient may either counseled prior antenatally or can be counseled in early labour.
6. Patient may be counseled after delivery for IUCD insertion within 48 hours of delivery or for IUCD insertion after 6 weeks.
7. Patients must be counseled by doctors/ staffs with detailed explanation of uses and adverse effects of IUCD.

STANDARDS OF CARE MAINTAINED IN POSTPARTUM METHOD.[1]

1. Woman must be counselled regarding advantages, limitations, effectiveness, side effects and problems related to IUCD.

2. The provider must explain the procedure for insertion and/or removal of the immediate PPIUCD.

3. Woman must be screened for clinical situations **as per WHO Medical Eligibility Criteria (MEC).**Screening should take place in the antenatal period, as well as immediately prior to insertion, immediate postpartum.

4. The woman must be counselled and offered another suitable postpartum family planning method if her clinical situation does not allow for insertion of the immediate PPIUCD.

5. The provider must insert the IUCD by following all recommended clinical and infection prevention measures for successful insertion.

6. Woman must be followed.

MEDICAL ELIGIBILITY CRITERIA (WHO) [1]

The WHO Medical Eligibility Criteria form the scientific foundation for patient assessment regarding family planning methods. It gives detailed guidance regarding whether a woman with a certain condition can safely use a given method of family planning.

Medical eligibility criteria for the immediate PPIUCD services can be grouped as follows:

Category 1:(Safely use)

- Immediate postplacental, immediate postpartum<48 hours or during cesarean section
- six weeks postpartum

Category 2: no conditions (**Generally use)**

Category 3:(Generally do not use)

- Between 48 hours and six weeks postpartum.
- Chorioamnionitis.
- Prolonged rupture of membranes (ROM)> 18 hours.

Category 4: (Do not use)

- Puerperal sepsis
- Unresolved postpartum haemorrhage

MATERIALS AND METHODS

MATERIALS AND METHODS

This is a pilot clinical trial conducted in the Department of Obstetrics and Gynecology at Chengalpattu Medical college Hospital, Chengalpattu from October 2012 to October 2013, which was approved by Ethical Committee.

Study design

STUDY TYPE	Interventional
ALLOCATION	Systematic (alternate basis)
INTERVENTION MODEL	Parallel assignment
MASKING	No blinding
PRIMARY PURPOSE	Contraception

STUDY SAMPLE:

The study includes 300 patients out of 500 patients who were motivated in the labour ward, assigned 150 patients in each group systematically on alternate basis who gave consent. Remaining 200 not given consent.

STUDY GROUPS

GROUP A: IUCD Cu-T 380A is inserted intrauterinely during the caesarean section before closing the uterine incision.

GROUP B: IUCD Cu-T 380 A is inserted more than 6 weeks after delivery by caesarean section in Out-patient clinic.

INCLUSION CRITERIA

- Includes Emergency caesarean deliveries (Primipara, Multipara not willing for sterilization)
- Age more than 18yrs but less than 49 yrs.
- > 6 wks after delivery and less than 1 year of caesarean section.

EXCLUSION CRITERIA

- Vaginal deliveries, Abortion.
- Between 48 hours after delivery and upto 6 weeks by caesarean section.
- Multipara willing for sterilization.
- Prolonged rupture of membranes > 18 hours.
- Features suggestive of Chorioamniotis.
- Features suggestive of Puerperal sepsis.
- Intrapartum / Postpartum hemorrhage.
- Contraindications of IUCD insertion such as recurrent pelvic infections, lower genital tract infection.
- Presence of one or more fibroids.
- Severe anemia.
- Complicated cases such as eclampsia, heart failure
- Uterine anomalies.
- Purulent discharge per vaginum.
- Extensive genital injuries.
- Disagreement to participate in the study were excluded from this study.

METHODS

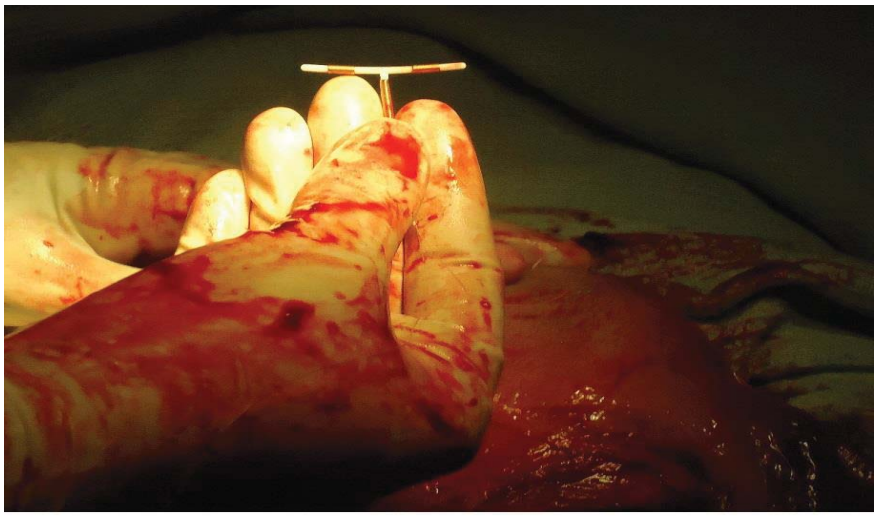
Patients are categorized into Group A (INTRACAESAREAN IUCD INSERTION) and Group B (INTERVAL INSERTION IN CAESAREAN DELIVERIES) by their willingness after giving a proper pre-op/ pre-insertion counseling regarding the time of IUCD insertion. The counseling will be given by either post graduate or senior staff nurse on duty. By using sterile techniques, In Group A the Cu-T- 380-A is inserted intrauterinely in caeseraen section. In Group B the CuT-380-A is inserted after 6 weeks of delivery by caesarean section by withdrawal technique.

TECHNIQUE

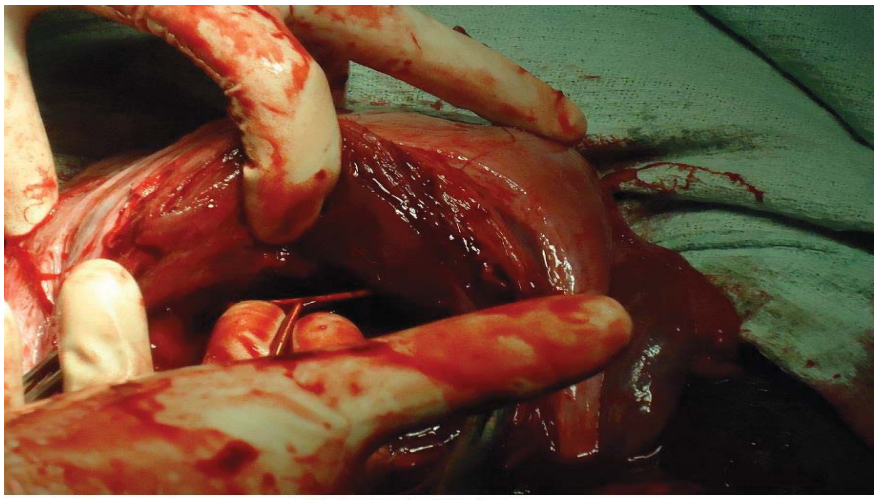
For Intracaesarean insertion:

After removing placenta in-toto. The uterus is inspected for any malformations which would limit the use of IUCD. Ensured that the nurse has opened IUCD on the sterile field. Uterus stabilized by grasping it at fundus. The IUCD is introduced through the uterine incision and placed at the uterine fundus. This is done manually between two fingers. No attempt is made to pass the strings of the IUCD through the cervical os before closure of the uterus. Instead the strings can be pointed towards the cervix and leave it lower down in the uterine cavity. This is to prevent uterine infection by contamination of the uterine cavity with vaginal flora, and to prevent displacement of the IUCD from the fundus by drawing the strings downward toward the cervical canal. **Care should be taken during closure of the uterine incision that the strings of the IUCD do not get included into the suture.[1]**

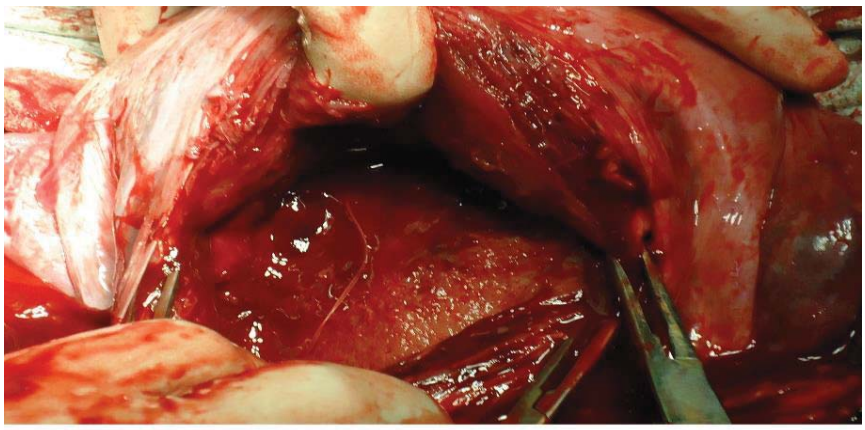
STEPS OF INTRACAESAREAN IUCD INSERTION



MANUAL HOLDING



INSERTION



TAIL POINTED TOWARDS CERVIX

EQUIPMENTS REQUIRED FOR INTERVAL IUCD INSERTION[2,1]

Cotton balls moistened with povidone-iodine (Betadine)

Sterile gloves

Sterile IUCD pack with IUCD

Sim's speculum

Vulsellum

Sponge holding forceps

Uterine sound

Straight artery forceps

Long scissors

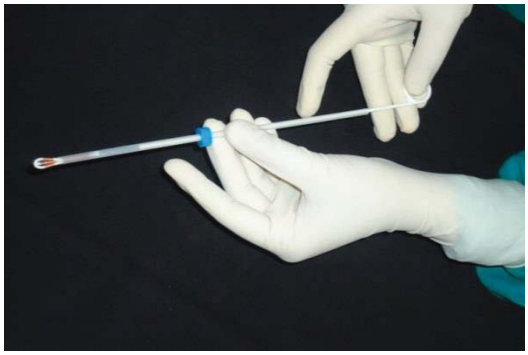
INTERVAL IUCD insertion (Withdrawal technique)

1. First rule out any contraindications, then counsel the woman regarding various problems associated with IUCD use.
2. Obtain written informed consent.
3. A non-steroidal anti-inflammatory agent is given.
4. Under aseptic precaution pelvic examination is done. Size and position of the uterus is identified. Any adnexal pathologies to be ruled out and should

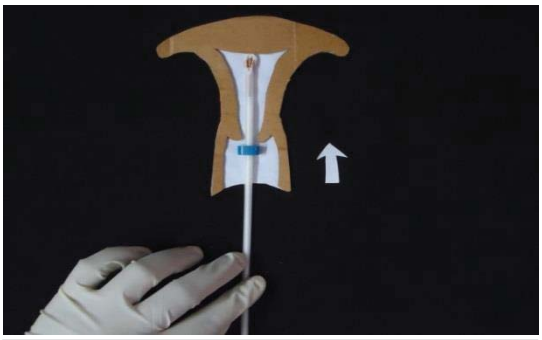
be evaluated if abnormalities are present. If any abnormal Mucopurulent discharge is present should be treated before IUCD insertion.

5. Under aseptic precaution perineal parts prepared and drapped with povidone iodine. Grasp the cervix with vulsellum. The cervical canal and uterine cavity are first straightened by applying gentle traction on the vulsellum.
6. The uterus is sounded to identify the depth and direction of the uterus.
7. No Touch Technique: Open the copper T 380 A partially, then the arms of the T are placed inside the insertion tube by folding the arms. Fix the flange according to utero-cervical length. Align the flange and the folded arms of the T in horizontal position. Insert the IUCD within 5 minutes of loading.
8. Insert the loaded IUCD into the cervical os at appropriate angle and advance it into the uterine cavity till resistance felt.
9. Hold the vulsellum and insertion rod stationary and withdraw the insertion tube till it touches the plunger rod such that IUCD would release into the uterine cavity. Plunger is removed then the insertion tube removed to prevent accidental displacement and expulsion of CuT..
10. The marker tail is cut 2 cm from the external os, vulsellum removed, observed for bleeding from the vulsellum puncture sites, and hemostasis checked speculum removed. The woman is advised to report any apparent adverse effects promptly.

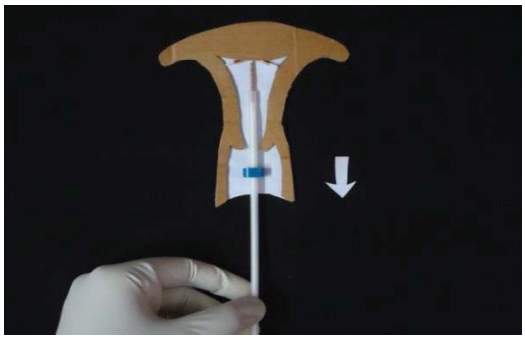
Withdrawal technique - Module



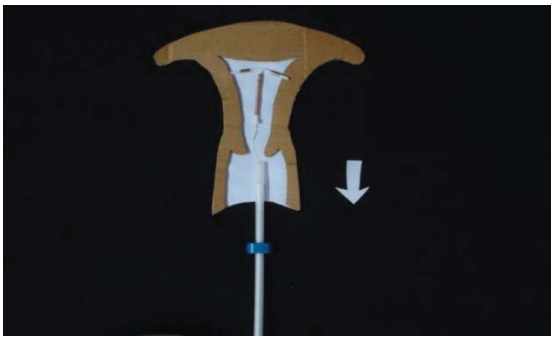
Loaded IUCD ready for insertion. Flange adjusted based on sound length



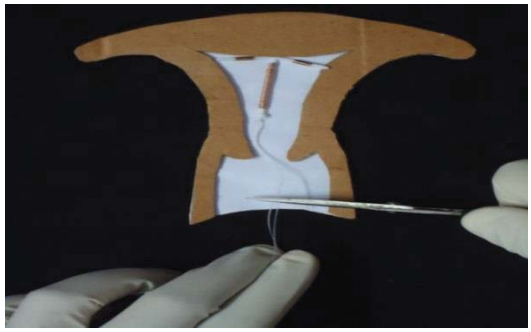
Insertion



Insertion tube withdrawn



IUCD released into uterine cavity



Thread cut at introitus level

POST INSERTION COUNSELLING [1,2]

Before discharge and after insertion in interval method, all patients are instructed about probable side effects and complications. Patients are shown CU-T 380 A how it looks like, its safety and told about its protection period (10 yrs.). Patients were informed about the checking of IUCD threads and were instructed to notice expulsion if any. They were advised to review in op clinic if they have warning signs like irregular bleeding, abdominal pain, dyspareunia, abnormal vaginal discharge, missing threads, and feeling of IUCD in the vagina.

INSERTION AND FOLLOW UP MODEL

	Delivery by caesarean	**6-wks postpartum in caesarean deliveries**	**6wks after insertion**	**6 months after insertion**
GROUP A	INSERTION		H/O, P/S, P/V, USG	H/O, P/S, P/V, USG
GROUP B		INSERTION	H/O, P/S, P/V, USG	H/O, P/S, P/V, USG

FOLLOW UP AND MONITORING

Both Group A and Group B patients are asked to come for follow up visits after 6weks and 6 months after IUCD insertion. At each follow-up visits patient was questionnaire regarding lower abdominal cramps, menstrual irregularities, excessive vaginal discharge and expulsion & removal of IUCD. A speculum examination was done to visualize the threads, look for excessive or offensive white discharge and for excessive bleeding. A pelvic examination was done to rule out evidence of PID. If the threads are long they were cut, if threads are not seen gentle probing of cervix done to find curled strings. If we still could not see strings, USG was done to confirm the presence of IUCD in situ. X-ray abdomen and pelvis AP and lateral view are taken to rule out perforation.

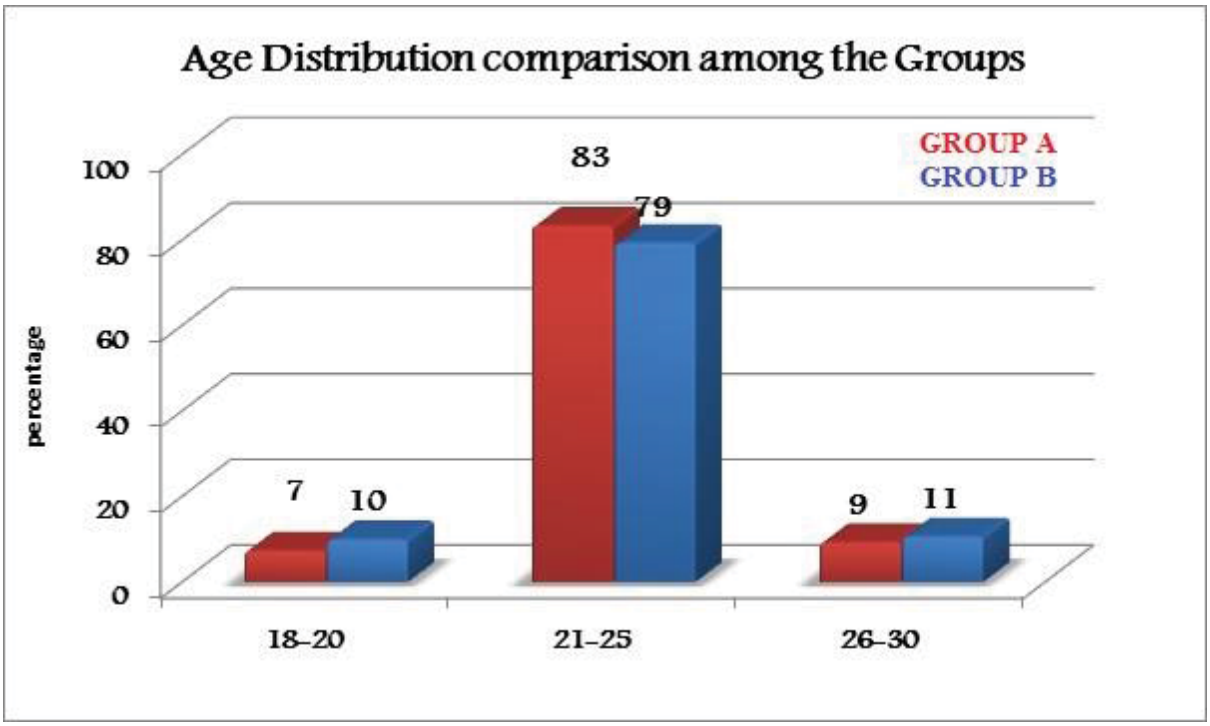
To interpret, For infection, if the patient had abdominal cramps associated with fever, elevated ESR, Excessive/offensive vaginal discharge would undergone wet mount vaginal discharge test as bed side. The presence of >10 polymorphs /High power field is a positive test suggestive of pelvic infection. For IUCD expulsion, patients with missing threads were done USG to confirm its absence.

Missing threads: Includes IUCD threads those curled within uterine cavity, those cut-off spontaneously, those that expelled spontaneously and those perforated into abdominal cavity.

RESULTS AND STATISTICS

AGE WISE DISTRIBUTION OF GROUPS

AGE FREQUENCY	Group A	Group B	Total	P value
18-20	11 (7%)	15 (10%)	26	0.639
21-25	125 (83%)	119 (79%)	244	
26-30	14 (9%)	16 (11%)	30	
Total	**150**	**150**	**300**	



MEAN AGE FOR GROUP ANALYSIS

MEAN AGE	Mean	Sd	P value
Group A	23.25	1.83	0.854
Group B	23.21	1.92	

Unpaired *t* test results

P value = 0.8536

By criteria this difference is considered to be not statistically significant.

Majority of the acceptors among the groups are in the range of 21- 25 years with 83% in Group A and 79% in Group B. Least acceptors are in the range of 18-20 years with 7% in Group A and 10% in Group B. Mean age for insertion in Group A is 23.25 and in Group B is 23.21.

PARITY WISE DISTRIBUTION OF GROUPS

PARITY	Group A	Group B	Total
Primi	131 (87%)	132 (88%)	263
Second	19 (13%)	18 (12%)	37
Total	**150**	**150**	**300**

Most of the acceptors were primipara. 87% in intra caesarean and 88% in interval insertion.13% in intra-caesarean and 12% in interval insertion are second gravida. Multipara preferred the permanent method of sterilization.

EDUCATIONAL STATUS OF GROUPS AND METHOD OF INSERTION

EDUCATION	Group A	Group B	Total
Primary school	0	11 (7%)	11
Mid school	19 (13%)	15 (10%)	34
Higher secondary school	89 (59%)	83 (55%)	172
Diploma	33 (22%)	32 (21%)	65
Degree	9 (6%)	9 (6%)	18
Total	**150**	**150**	**300**

Majority of the study people studied upto high school 59% in Group A and 55% in Group B. Followed by diploma 22% in Group A and 21% in Group B, degree holders 6% in both the groups.

Comparison of presence of lower abdominal cramp between groups

Cramps	Group A	Group B	P value	
At 6th Week	10(7.9%)	8 (6.6%)	0.676	Not significant
At 6th Month	8(6.9%)	4 (3.6%)	0.261	Not significant

During the follow up, at 6 weeks, lower abdominal cramp present in 7.9% in Group A higher than in Group B (6.6%) p=0.676, hence not significant whereas at 6th month 6.9% in Group A higher than in Group B(3.6%) p=0.261, hence not significant.

Comparison of presence of Menstrual irregularities between groups

Menstrual Irregularities	Group A	Group B	P value	
At 6th Week	8 (6.3%)	4 (3.3%)	0.260	Not significant
At 6th Month	4 (3.4%)	2 (1.8%)	0.433	Not significant

At 6 weeks, Menstrual irregularities present in 6.3%in Group A higher than in Group B (3.3%) p=0.260, hence not significant. Whereas at 6th month 3.4% in Group A higher than in Group B (1.8%) p=0.433, hence not significant.

Comparison of presence of Excessive vaginal discharge between groups

Excessive Vaginal Discharge	**Group A**	**Group B**	**P value**	
At 6th Week	11(8.7%)	12(9.8%)	0.828	Not significant
At 6th Month	5(4.3%)	6(5.3%)	0.765	Not significant

At 6 weeks, excessive vaginal discharge present in 8.7% in Group A lower than in Group B (9.8%) p=0.828, hence not significant whereas at 6th month 4.3% in Group A lower than in Group B(5.3%) p=0.765, hence not significant.

Comparison of IUCD removal by patients between groups

IUCD Removed	Group A	Group B	P value	
At 6th Week	4 (3.2%)	3 (2.5%)	0.734	Not significant
At 6th Month	10 (8.6%)	4 (3.6%)	0.112	Not significant

At 6 weeks in group A 4 has removed IUCD. Among them 3 removed due to social reason. One removed due to menstrual irregularity. In GroupB 3 has removed IUCD. Among them 2 removed due to menstrual irregularities. One due to excessive white discharge.

At 6 months in group A 10 has removed IUCD. Among them 6 removed due to social reason. Two removed due to menstrual irregularity. One due abdominal pain. One due to partial expulsion. In GroupB 4 has removed IUCD. Among them 3 removed due to menstrual irregularities. One due to social reasons.

COMPARISION OF MISSED STRINGS BETWEEN GROUPS

Missed strings	**6 weeks**		**6 months**	
	Group A	**Group B**	**Group A**	**Group B**
Threads not seen	74(58.8%)	9(7.4%)	62(53.4%)	9(8.0%)
IUCD removed	4(3.2%)	3(2.5%)	10(8.6%)	4(3.6%)
Expelled	3(2.5%)	2(1.7%)	0(0.0%)	2(1.9%)
Missed strings	67(53.2%)	4(3.2%)	52(44.8%)	3(2.6%)
P value	0.000		0.000	
	significant		significant	

Here threads not seen includes those expelled and those removed IUCD. Missed string were calculated by deducing those expelled and those removed from threads not seen.

At 6 weeks, Missed String present in 53.2%in Group A higher than in Group B (3.2%) p=0.000, hence significant whereas at 6^{th} month 44.8% in Group A higher than in Group B(2.6%) p=0.000, hence significant. This is due to the curling of strings within the uterine cavity in intracaesarean technique.

COMPARISON OF EXPULSION BETWEEN GROUPS

Expulsion	**6 weeks**		**6 months**	
	Group A	**Group B**	**Group A**	**Group B**
IUCD not seen on USG	7(5.6%)	5(4.1%)	10(8.6%)	6(5.4%)
IUCD removed	4(3.2%)	3(2.5%)	10(8.6%)	4(3.6%)
Expelled	3(2.5%)	2(1.7%)	0(0.0%)	2(1.9%)
P value	1.000		0.497	
	Not significant		Not significant	

Here USG is done for those who had threads not seen. Expulsion calculated by deducing those with threads from the total follow up excluding those removed.

Expulsion rate is found to be higher in Group A (2.5%) than Group B (1.7%) p=1.000 at 6^{th} week. At 6^{th} month there is no IUCD expulsion in Group A (0%) than in Group B where there is (1.9%) expulsion p=0.497

FOLLOW UP AT 6TH WEEK

6TH WEEK follow up	GROUP A n=126	GROUP B n=122	P VALUE
Lower abdominal cramp	10(7.9%)	8(6.6%)	0.676
Presence of Menstrual irregularities	8(6.3%)	4(3.3%)	0.260
Excessive vaginal discharge	11(8.7%)	12(9.8%)	0.828
Infection	3(2.3%)	2(1.6%)	1.000
H/o of IUCD removal	4(3.2%)	3(2.5%)	0.734
Threads seen on per speculum	52(41.3%)	113(92.6%)	0.000
IUCD not found (confirmed by Ultrasonogram)	7(5.6%)	5(4.1%)	
IUCD expelled	3(2.5%)	2(1.7%)	1.000
Missed strings	67(53.17%)	4(3.2%)	0.000
Lost follow up n=150	24(16.0%)	28(18.7%)	0.647

At 6th week follow up visit, among the 150 patients each in Group A and Group B, 7.9% in Group A and 6.6% in Group B are associated with lower abdominal cramps. 6.3% and 3.3% in Group A and Group B respectively are associated with menstrual irregularities.8.7% and 9.8% in Group A and Group B respectively gives complaints of excessive /abnormal vaginal discharge. 3.2% in Group A and 2.5% in Group B gave the h/o of IUCD removal. Among the examined patients, thread seen in 41.3% Group A and 92.6% in Group B per speculum. In other words 58.8% and 7.4% in Group A and Group B were threads not seen. Those with threads not seen had undergone USG examination to confirm the position of IUCD. 5.6% in Group A and 4.1% in Group B had no IUCD in USG examination. X-ray abdomen (AP) and lateral view were taken to rule out perforation. 2.5% in Group A and 1.7% in Group B had complete expulsion of IUCD. 16%in Group A and, 18.7% in Group B didn't turned back for follow up in spite of advice and letters to home.

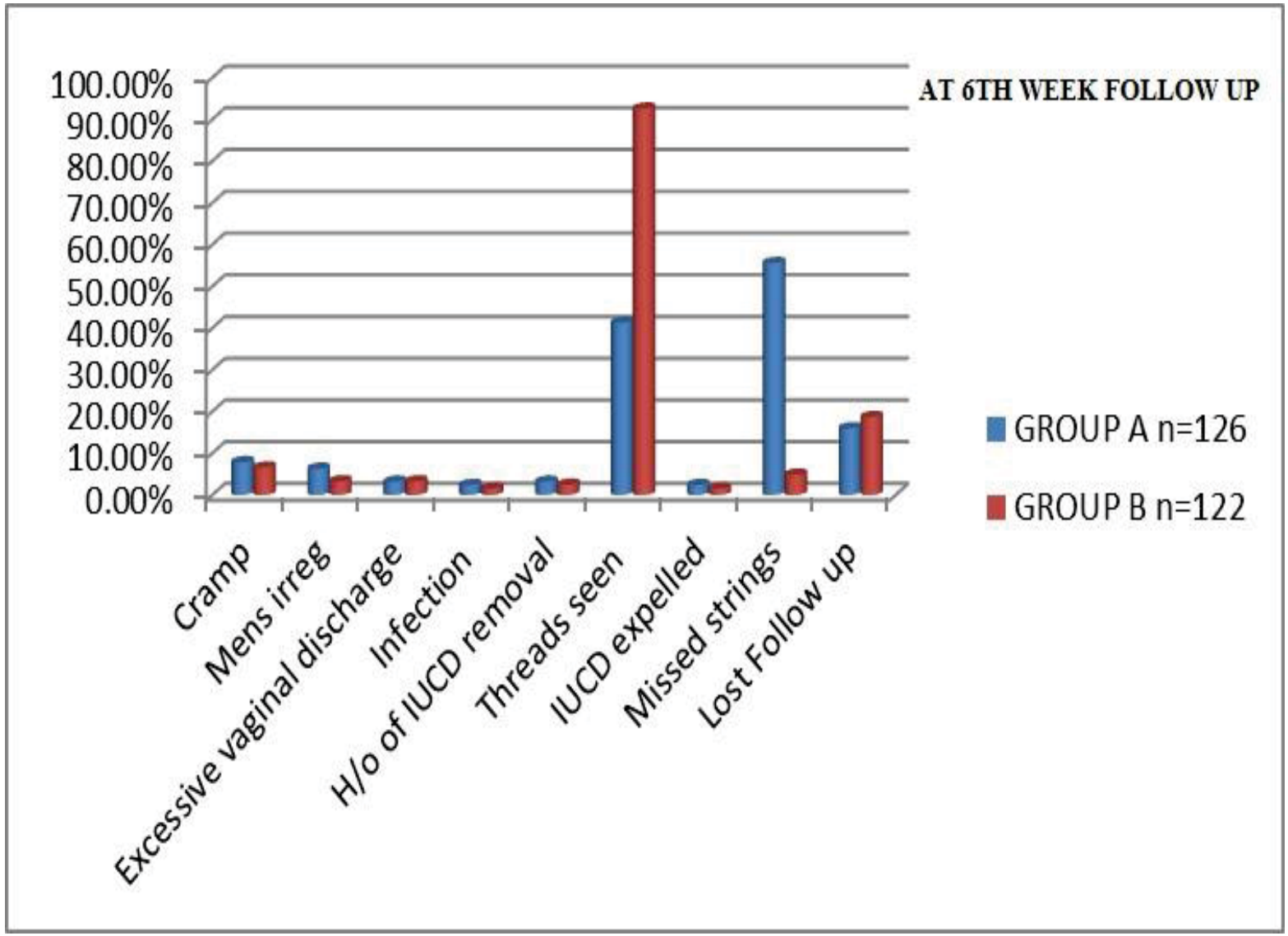


FIG- : FOLLOW UP CHART AT 6TH WEEK

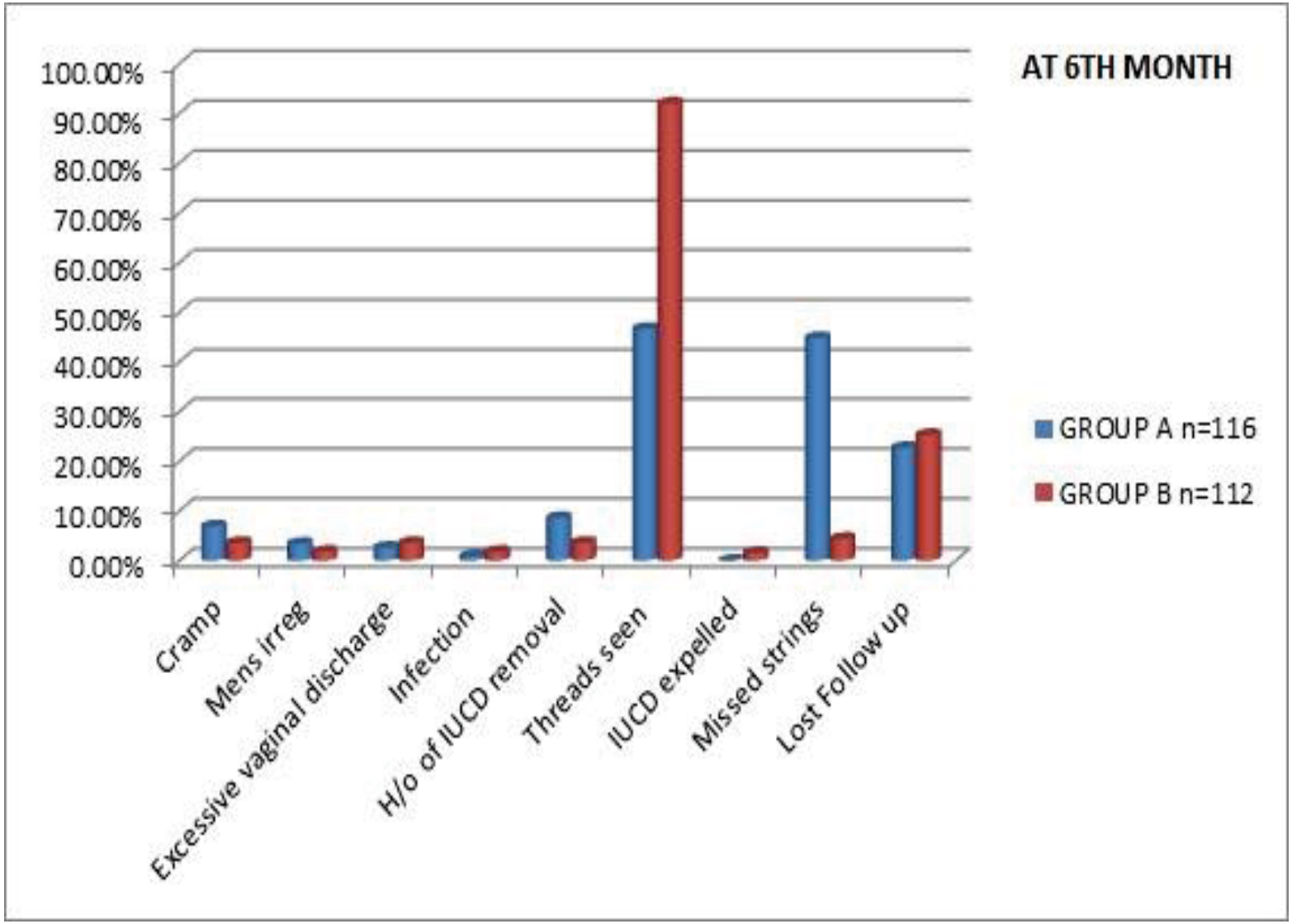


FIG- : FOLLOW UP CHART AT 6TH MONTHS

FOLLOW UP AT 6TH MONTH

6TH month follow up	GROUP A n=116	GROUP B n=112	P VALUE
Lower abdominal cramp	8(6.9%)	4(3.6%)	0.261
Presence of Menstrual irregularities	4(3.4%)	2(1.8%)	0.433
Excessive vaginal discharge	5(4.3%)	6(5.3%)	0.765
Infection	1(0.9%)	2(1.8%)	0.617
H/o of IUCD removal	10(8.6%)	4(3.6%)	0.112
Threads seen on per speculum	54(46.6%)	103(92.0%)	0.000
IUCD not found (confirmed by Ultrasonogram)	10(8.6%)	6(5.4%)	
IUCD expelled	0(0.0%)	2(1.9%)	0.497
Missed strings	52(44.8%)	3(2.6%)	0.000
Lost follow up n=150	34(22.7%)	38(25.3%)	0.685

At 6th month follow up visit, among the 150 patients each in Group A and Group B, 6.9% in Group A and 3.6% in Group B are associated with lower abdominal cramps. 3.4% and 1.8% in Group A and Group B respectively are associated with menstrual irregularities.4.3% and 5.3% in Group A and Group B respectively gives complaints of excessive /abnormal vaginal discharge. 8.6% in Group A and 3.6% in Group B gave the h/o of IUCD removal. Among the examined patients, 46.6% in Group A and 92% in Group B were threads seen per speculum. In other words 53.4% and 8.0% in Group A and Group B were threads not seen. 8.6% in Group A and 5.4% in Group B had no IUCD in USG examination. X-ray abdomen (AP) and lateral view were taken to rule out perforation. 0% in Group A and 1.9% in Group B had complete expulsion of IUCD. 22.7%in Group A and 25.3% in Group B didn't turned back.

PURPOSE OF STATISTICAL ANALYSIS [8]

To know whether the above observations are statistically significant or not, we put forth hypothesis, that the relation between groups and outcomes is not true but occurred by chance.

All variables were examined for outliers and non-normal distributions. The Categorical variables were expressed as Frequency and percentage. The Quantity variables were expressed as mean and standard deviation. Descriptive statistics were used to evaluate baseline characteristics.

The group comparison for the categorical variables were analysed using Chi square test / Fisher Exact test and group comparison for quantity variables were analysed using Independent student t test. The p value of less than 0.05 was considered as statistically significant.

- **To analyse mean age of groups to exclude age as a confounding factor.**
- **To analyse whether the relationship between the groups and outcomes are statistically significant or not.**

FISHERS EXACT TEST FOR INFECTION

AT 6 WEEKS	**INFECTION PRESENT**	**ABSENT**
GROUPA n=126	3 (2.3%)	123(97.7%)
GROUP B n=122	2(1.6%)	120(98.4%)

P value = 1.0000

The association between groups and outcomes is considered to be **not statistically significant**.

AT 6 MONTHS	**INFECTION PRESENT**	**ABSENT**
GROUPA n=116	1(0.9%)	115(99.1%)
GROUP B n=112	2(1.8%)	110(98.2%)

P value = 0.6168

The association between groups and outcomes is considered to be **not statistically significant**.

FISHERS EXACT TEST FOR IUCD EXPULSION

AT 6 WEEKS	**IUCD EXPELLED**	**NOT EXPELLED**
GROUP A n= 122	3(2.5%)	119(97.5%)
GROUP B n=119	2(1.7%)	117(98.3%)

P value = 1.0000

The association between groups and outcomes is considered to be **not statistically significant**.

AT 6 MONTHS	**IUCD EXPELLED**	**NOT EXPELLED**
GROUPA n= 106	0(0%)	106(100%)
GROUP B n=108	2(1.9%)	106(98.1%)

P value = 0.4977

The association between groups and outcomes is considered to be **not statistically significant**.

To summarize Results:

At 6th week	**Group A**		**Group B**	**P value**	**Difference**
Missed strings	67(53.2%)	>>	4(3.2%)	0.000	**Significant**
IUCD expelled	3(2.5%)	>	2(1.7%)	1.000	**Not Significant**
Infection	3(2.3%)	>	2(1.6%)	1.000	**Not Significant**
Lost follow up	24(16.0%)	<	28(18.7%)	0.647	**Not Significant**

At 6th month	**Group A**		**Group B**	**P value**	**Difference**
Missed strings	52(44.8%)	>>	3(2.6%)	0.000	**Significant**
IUCD expelled	0(0.0%)	<	2(1.9%)	0.497	**Not Significant**
Infection	1(0.9%)	>	2(1.8%)	0.617	**Not Significant**
Lost follow up	34(22.7%)	<	38(25.3%)	0.685	**Not Significant**

There is no uterine perforation in both groups during the study period.

There is no contraceptive failures in both groups during the study period.

DISCUSSION

The need for contraception is highly warranted in our country since approximately 27% of births in India occur in less than 24 months after a previous birth. Another 34% of births occur between 24 and 35 months.

So the term **birth-to-pregnancy interval** is important which is the time period between a live birth and the start of the next pregnancy. After a live birth, a woman should wait at least 24 months (but not more than five years) before attempting the next pregnancy. After a spontaneous or induced abortion, a woman should wait at least 6 months before attempting the next pregnancy.[1]

During this period, women needs to be protected from pregnancy. She is in need of contraception. Copper containing IUCD Cu-T 380A will be the best option in view of easy& one-time insertion,ie..effective for 10 years and also cost-effectiveness. Among various types of contraception our study dealswith Postpartum IUCD Insertion Especially Intra-caesarean Method.The specific advantages of postpartum insertion includes: Convenience,High motivation, Safe because she is not pregnant at the time of insertion. No effect on amount and quality of breast milk. The woman has an effective method for contraception before discharge from hospital. For the service provider it saves time as insertion is performed on the same delivery table. Additional evaluations and separate

clinical procedure is not required. Need for minimal additional instruments, supplies and equipment. Giving proper spacing of births results in good healing of uterine scar which reduces the chance of rupture uterus.[1,2]

Many studies compare the expulsion rates of postplacental IUCD insertion among vaginal and caesarean deliveries showed lower expulsion rates with intracaesarean IUCD insertion.

In our study we compared immediate intra-caesarean IUCD insertion Group A and interval insertion Group B in caesarean deliveries. Similar to postplacental IUCD insertion it has the advantage of high motivation, assurance that the woman is not pregnant, and convenience. Here we use 150 cases in each group. The cases were followed up at 6weeks and 6 months with set of parameters. Here we look for infection rate and expulsion rate as primary outcome measure and complications as secondary outcome measures.

Our study shows majority of acceptors are in the age group of 21-25 years as 83% in Group A and 79 % in Group B. Least acceptors are found in the age group of 18 – 20 years with 7% in Group A and 10% in Group B.

Majority of acceptors are primipara with 87% in Group A and 88% in Group B. Majority of acceptors belongs to high school with 59% in Group A and 55% in Group B. Least acceptors are in Primary School with 0% in Group A and 7% in Group B.

During the follow up, at 6 weeks, lower abdominal cramp present in 7.9% in Group A higher than in Group B (6.6%) p=0.676, hence not significant whereas at 6th month 6.9% in Group A higher than in Group B(3.6%) p=0.261, hence not significant.

At 6 weeks, Menstrual irregularities present in 6.3%in Group A higher than in Group B (3.3%) p=0.260, hence not significant. Whereas at 6th month 3.4% in Group A higher than in Group B (1.8%) p=0.433, hence not significant. At 6 weeks, excessive vaginal discharge present in 8.7% in Group A lower than in Group B (9.8%) p=0.828, hence not significant whereas at 6th month 4.3% in Group A lower than in Group B(5.3%) p=0.765, hence not significant. Mexico study states there is no statistical differences noted among the complications of IUCD between the immediate and interval IUCD insertion.[21]

Infection rate is found to be higher in Group A(2.3%) than Group B(1.6%) p=1.000 at 6th week. At 6th months infection is higher in Group B (1.8%) than Group A(0.9%) p=0.617. Mali study states that infection during 6 month of

IUCD insertion were rare overall is less than 2% and did not differ significantly by timing of insertion.

At 6 weeks, Missed String present in 53.2%in Group A higher than in Group B (3.2%) p=0.000, hence significant whereas at 6^{th} month 44.8% in Group A higher than in Group B(2.6%) p=0.000, hence significant. This is due to the curling of strings within the uterine cavity in intracaesarean technique.

Expulsion rate is found to be higher in Group A (2.5%) than Group B (1.7%) p=1.000 at 6^{th} week. At 6^{th} month there is no IUCD expulsion in Group A (0%) than in Group B where there is (1.9%) expulsion p=0.497. Nathale kappa states that immediate insertion following caesarean delivery shows lower expulsion rate than immediate insertion following vaginal delivery.[20,21,22]

Mexico study shows expulsion rate at 1 year follow up was 9% in immediate intracaesarean and 4% in interval IUCD insertion in caesarean deliveries.

Mali study states expulsion rates in immediate intracaesarean over 2 year is 11.3%. expulsion rates at 1 and 3 month are 4.1% and 10.9% respectively. Continuation rate of IUCD in intracaesarean technique is 78.2%.

At 6^{th} week Infection and expulsion rates are found to be higher in intra-caesarean insertion than interval method but not significant, statistically. At 6^{th} month infection rate is found to be higher in intra-caesarean method and expulsion rate is found to be higher in interval insertion than intra-caesarean method (no expulsion in intra-caesarean method) but not significant, statistically. Missed strings are found to be higher in intra-caesarenthan interval method both at 6^{th} week and at 6^{th} month follow up.

To infer, missed strings are found to be higher in intra-caesarean than interval method. Regarding infection and expulsion there is no significant difference between intra-caesarean and interval method within the period of 6months follow up.

SIMILAR STUDIES

1) INTRAUTERINE DEVICE INSERTION DURING THE POSTPARTUM PERIOD by *Nathalie kapp, kathryn m. Curtis.* They analysed 297 articles, all studies examined the outcomes of copper IUCD insertions within the postpartum time period compared to other time intervals. They conclude no increase in risk of complications who had an IUCD inserted during the postpartum period. However, some increase in expulsion rates occurred with delayed postpartum insertion when compared to immediate insertion and with immediate insertion when compared to interval insertion, intracaesrean cases are associated with lower expulsion rates than postplacental vaginal insertions, without increasing rates of postoperative complications.[39]

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2) POST-PLACENTAL INTRAUTERINE DEVICE INSERTION - a five year experience at a tertiary care centre in north india by *ManjuShukla***,** *SabuhiQureshi.*They compared postplacental insertion with interval insertion. A total of 1317 women were included in the study. Of these, 1037 (78.7%) came for first follow up. The cumulative expulsion rate at the end of 6 months was 10.68 per cent. There was no case of misplaced IUCD. They conclude that although the expulsion rate for immediate postpartum insertion was higher than for interval insertion, the benefits of providing highly effective contraception immediately after delivery outweigh this disadvantage, particularly in country where women have limited access to medical care.[38]

3) IMMEDIATE POST-PARTUM INSERTION OF INTRAUTERINE DEVICES by *David A Grimes, Laureen M Lopez, Kenneth F Schulz, Huib AAM Van Vliet, Nancy L. Stanwood.* Theystudied nine RCT. One directly compared immediate post-partum insertion with delayed intervalinsertion. Finally they conclude that Immediate post-partum insertion of IUCDs appeared effective, though comparisons with other insertion times werelimited. Expulsion rates appear to be higher than with interval insertion. Advantages of immediate post-partum insertion include high motivation, assurance that the woman is not pregnant, and convenience. [40]

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SUMMARY

To summarize, we compared intra-caesarean IUCD insertion (Group A) and interval insertion (Group B) in caesarean deliveries. We motivated 500 patients out of which 300 gave willingness for the study. A systematic study recruited patients alternately who gave consent. The cases were followed up at 6weeks and 6months post-insertion with a set of parameters. Here we look for Missed strings, Infection and Expulsion rate as the primary outcome measure. Complications as secondary outcome measure.

During the follow up, at 6 weeks, lower abdominal cramp present in 7.9% in Group A higher than in Group B (6.6%) p=0.676, hence not significant whereas at 6^{th} month 6.9% in Group A higher than in Group B(3.6%) p=0.261, hence not significant.

At 6 weeks, Menstrual irregularities present in 6.3%in Group A higher than in Group B (3.3%) p=0.260, hence not significant. Whereas at 6^{th} month 3.4% in Group A higher than in Group B (1.8%) p=0.433, hence not significant. At 6 weeks, excessive vaginal discharge present in 8.7% in Group A lower than in Group B (9.8%) p=0.828, hence not significant whereas at 6^{th} month 4.3% in Group A lower than in Group B(5.3%) p=0.765, hence not significant.

Infection rate is found to be higher in Group A (2.3%) than Group B (1.6%) p=1.000at 6^{th} week. At 6^{th} months infection is higher in Group B (1.8%) than Group A (0.9%) p=0.617. Expulsion rate is found to be higher in Group A (2.5%) than Group B (1.7%) p=1.000 at 6^{th} week. At 6^{th} month there is no IUCD expulsion in Group A (0%) than in Group B where there is (1.9%) expulsion p=0.497. Missed strings are found to be higher in intra-caesarean than interval method both at 6^{th} week and at 6^{th} month follow up. There is no complications such as uterine perforation and contraceptive failures in both groups during the study period.

To analyse whether they are significant or not, we putforth null hypothesis and analysed with Fishers Exact Test. On statistical analysis, it is found that there is no significant difference in occurrence of infection as well expulsion in both the groups. Regarding missed strings there is significant difference between group with higher values for intra-caesarean method. Hence it is stated that both methods are equally effective for contraception in caesarean delivery.

CONCLUSION

Based on above discussion and studies it is found that postpartum IUCD insertion is an excellent method of contraception. In our study we have shown the comparison between intra-caesarean insertion and interval insertion. Results shown difference in Lower abdominal cramp, Menstrual irregularities, Excessive vaginal discharge, Infection, Missed string and Expulsion rates between groups. But on statistical analysis, it is found that there is no significant difference in Lower abdominal cramp, Menstrual irregularities, Excessive vaginal discharge, infection and expulsion rate between the groups.

For missed strings there is a significant difference between the groups with more Missed strings on intra-caesarean method. The other disadvantage of intra-caesarean method is removal of IUCD may require anaesthesia or hysteroscopic guidance because of high rates of missed strings.

To conclude, intra-caesarean Cu-T 380A is equally effective as interval IUCD insertion without any added complications (except for high Missed string rates) for contraception in caesarean deliveries within the period of 6 months follow up, with added advantage of **high motivation, good compliance, safety and easy for provider to deliver the services.**

BIBLIOGRAPHY

AND

ANNEXURES

BIBLIOGRAPHY

1. Reference manual, Ministry of Health & Family Welfare, Government of India, NirmanBhawan, New Delhi-110011, Nov 2010.
2. Reference manual, Ministry of Health & Family Welfare, Government of India, NirmanBhawan, New Delhi-110011, July 2007.
3. Williams gynecology 23rd edition.
4. Bereks & Novaks gynecology, 15th edition.
5. Marc A. Fritz and Leon Speroff, clinical gynecology
6. Shaws textbook of gynecology,5th edition.
7. Danforth, 9th edition.
8. Fundamentals of biostatistics, Bernard A rosner**.**
9. Thiery M (March 1997), "Pioneers of the intrauterine device", Eur JN Contracept Reprod Health Care **2** (1): PMID 9678105.
10. Thiery M (June 2000), "Intrauterine contraception: from silver ring to intrauterine contraceptive implant", Eur. J. Obstet. Gynecol. Reprod. Biol. **90** (2): PMID 10825633.
11. Marai W. Lower genital tract infections among pregnant women: a review. East Africa Medical Journal 2001;78(11):581-585.
12. Kurewa NE, Mapingure MP, Munjoma MW, Chirenje MZ, Rusakaniko S, Stray-Pedersen B. The burden and risk factors of sexually transmitted infections and reproductive tract infections among pregnant women in

Zimbabwe. Biomed Central Infectious Diseases 2010;10: 127; doi: 10.1186/1471-2334-10-127.

13. Burkeman RT, for the Women's Health Study. Association between intrauterine devices and pelvic inflammatory disease. Obstet Gynecol 1981;57:269 276.

14. Farley TMM, Rosenberg MJ, Rowe PJ, et al. Intrauterine devices and pelvic inflammatory disease: an international perspective. Lancet 1992;339:785“788.

15. Centers for Disease Control and Prevention. Sexually transmitted diseases treatment guidelines 2002.MMWR 2002;51(No. RR-6):48-52.

16. Muthal-Rathore A. Immediate postpartum insertion for intrauterine devices: RHL commentary (last revised: 1 September 2010). The WHO Reproductive Health Library; Geneva: World Health Organization.

17. Global Health Observatory. Unmet need for family planning. Geneva:WorldHealthOrganization; at:www.who.int/ entity /gho/mdg/ maternal_ health /situation_trends_family_planning/en.

18. Grimes DA, Lopez LM, Schulz KF, Van Vliet HAAM, Stanwood NL. Immediate post-partum insertion of intrauterine devices. Cochrane Database of Systematic Reviews 2010; Issue 5. Art. No.: CD003036; DOI: 10.1002/14651858.CD003036.pub2.

19. Thiery M, Van Kets H, Van Der Pas H. Immediate postplacental IUD insertion: the expulsion problems. Contraception a:1985;31;331-349.

20. Intrauterine device insertion during the postpartum period:a systematic review N. Kapp, K.M. Curtis / Contraception 80 (2009) 327–336

21. Immediate Postpartum Insertion of an Intrauterine Contraceptive DeviceLONDON, GARY D. M.D.; ANDERSON, GAIL V. M.D., F.A.C.O.G

22. Ricalde RL, Tobias GM, Perez CR, Ramirez NV. Random comparative study between intrauterine device multiload Cu375 and tcu380A inserted in the postpartum period. Ginecolobstetmex2006;74:306–11.

23. Thiery M, Van der Pas H, Delbeke L, Van Kets H. Comparative performance of 2 copper-wired iuds(Ml-Cu-250 and T-Cu-200)—immediate postpartum and interval insertion. ContraceptDelivSyst 1980;1:27–35.

24. Thiery M, Van Kets H, Van der Pas H, van osw, Dombrowicz N. The ML Cu250; clinical experience in Belgium and the Netherlands. Br J ObstetGynaecol 1982;89(Suppl 4):51–3.

25. Brenner PF. A clinical trial of the Delta-T intrauterine device immediate postpartum insertion. Contraception 1983;28:135–47.

26. Chi IC, Wilkens L, Rogers S. Expulsions in immediate postpartum insertions of Lippes Loop D and Copper T IUDs and their counterpart Delta devices an epidemiological analysis. Contraception 1985;32: 119–34.

27. Morrison C, Waszak C, Katz K, Diabate F, Mate EM. Clinical Outcomes Of Two Early Postpartum IUD Insertion Programs In Africa. Contraception 1996;53:17 21.

28. El-Shafei MM, Mashali A, Hassan EO, El-Boghdadi L, El-Lakkany N. Postpartum and postabortion intrauterine device insertion unmet needs of safe reproductive health: three years experience of a Mansoura University Hospital. Egypt SocObstetGynecol 2000;26:253–62.

29. Mülller ALL, Ramos JGL, Martins-Costa SH, et al. Transvaginalultrasonographic assessment of the expulsion rate of intrauterine devices inserted in the immediate postpartum period: a pilot study. Contraception 2005;72:192–5.

30. Zhou SW, Chi IC. Immediate Postpartum Iud Insertions In A Chinese Hospital—A Two Year Follow-Up. Int J GynaecolObstet 1991;35:157–64.

31. Bonilla Rosales F, Aguilar Zamudio ME, Cazares Montero ML, Hernandez Ortiz ME, Luna Ruiz MA. Factors For Expulsion Of Intrauterine Device

Tcu380a Applied Immediately Postpartum And After A Delayed Period. Rev MédInstMexSeguroSoc 2005;43:5–10.

32. Lara R, Sanchez RA, Aznar R. Application Of Intrauterine Device Through The Incision Of The Cesarean Section. GinecolObstetMex 1989; 57:23–7.

33. Welkovic S, Costa LO, Faundes A, de Alencar X, Costa CF. Postpartum Bleeding And Infection After Post-Placental Iucd Insertion. Contraception 2001;63:155–8. Celen S, Moroy P, Sucak A, Aktulay A, Danisman N. Clinical outcomes of early postplacental insertion of intrauterine contraceptive devices. Contraception 2004;69:279–82.

34. Eroglu K, Akkuzu G, Vural G, Dilbaz B, Akin A, Taskin L, et al. Comparison Of Efficacy And Complications Of Iud Insertion In Immediate Postplacental/Early Postpartum Period With Interval Period: 1 Year Follow-Up. Contraception 2006;74:376–81.

35. MishellJr DR, Roy S. Copper Intrauterine Contraceptive Device Event Rates Following Insertion 4 To 8 Weeks Post Partum. Am J ObstetGynecol 1982;143:29–35.

36. HARRIS RP. Current Methods Of The Us Preventive Services Task Force: A Review Of The Process. Am J Prev Med 2001;20:21–5. Mohllajee AP,

Curtis KM, Flanagan RG, Rinehart W, Gaffield ML, Peterson HB. Keeping up with evidence: a new system for WHO's evidence-based family planning guidance. Am J Prev Med 2005;28:483–90

37. Post-Placental Intrauterine Device Insertion - A Five Year Experience At A Tertiarycare Centre In North India by ManjuShukla, SabuhiQureshi, Chandrawati. Indian Journal Of Medical Research Volume 136 , 2012

38. Intrauterine Device Insertion During The Postpartum Period by Nathalie Kapp, Kathryn M. Curtis,Contraception 80 (2009) 327–336 Elsevier

39. Immediate Post-Partum Insertion Of Intrauterine Devices by David A Grimes, Laureen M Lopez, Kenneth F Schulz, Huib AAM Van Vliet, Nancy L. Stanwood, The Cochrane Library 2010, Issue 5

PROFORMA

- **Name:**
- **Age/Sex:**
- **Ip No:**
- **Date of Admission:**
- **Date of delivery/Lscs:**
- **Date of discharge:**
- **Date of Insertion of IUCD:**
- **Intra Caesarean/ Extended Postpartum Insertion**
- **Address For Communication / Phone No:**
- **Socio-economic status:**

Obstetric formula: G P L A

Obstetric history:

Past:

Present :

1st Trimester

2nd Trimester

3rd Trimester

Menstrual h/o: menarche, cycles, flow .

Marital h/o: years, consanguinity:

Previous Medical Illness:

- H/s/o Gestational hypertension
- H/o dilatation and curettage
- Diabetes
- Epilepsy
- Migraine
- H/o of STD

Date of LSCS:

Indication for LSCS:

H/o Draining / Duration :

H/o Bleeding both antepartum / Intrapartum / postpartum :

GENERAL EXAMINATION AT THE TIME OF IUCD INSERTION:

Consciousness, orientation

Built, nourishment Height

Pallor Weight

Icterus BMI

Pedal edema

BP: / mmHg

PR: / min

Temp:

CVS: S1S2

RS: NVBS

PERABDOMEN:

Inspection:

Palpation:

PER VAGINUM

PER SPECULUM

CNS:

Investigations:

- Grouping and typing.
- Complete hemogram.
- Urine routine.
- Bleeding time.
- Clotting time.
- HIV I & II
- VDRL
- Ultrasonogram.

Parameters	**After 6 weeks of insertion**	**After 6 month of insertion**
Lower abdominal cramp		
Menstrual irregularities		
H/o of intermenstrual bleeding		
H/o dyspareunia		
H/o White discharge (Normal or Abnormal (time, amount, foul smelling) wet mount test		
Temperature		
Pulse rate		
Blood pressure		
Per abdomen		
Per speculum		
Per vaginum		
Ultrasound for position of IUCD		

GROUP A MASTER CHART

S.NO	NAME	AGE	IP NO	PARITY	EDUCATION	CRAMPS	Irregular menses	Excess white discharge	IUCD REMOVED	THREADS SEEN	IUCD on USG	CRAMPS	Irregular menses	Excess white discharge	IUCD REMOVED	THREADS SEEN	IUCD on USG
						At 6th week follow up						At 6th month follow up					
1	GAYATHRI	22	6693	1	4	0	0	0	0	0	1	0	0	0	0	0	1
2	MOHANA	24	6820	1	5	0	0	0	0	0	1	0	0	0	0	0	1
3	THENMOZHI	21	6934	1	3	0	0	0	0	1	4	0	0	0	0	1	4
4	TAMILARASI	23	7874	1	4	0	0	0	0	0	1	0	0	0	0	0	1
5	REVATHI	24	9034	1	5	0	0	0	0	0	0	3	3	3	0	3	3
6	BHARGAVI	26	9270	2	6	0	0	0	0	0	1	0	0	0	0	0	1
7	AMUTHA	26	9446	2	5	0	0	0	0	0	1	0	0	0	1	0	0
8	PRIYA	25	9584	1	4	0	0	0	0	0	1	0	0	0	0	0	1
9	MAHESWARI	22	9756	1	3	1	0	0	0	1	4	1	0	0	0	1	4
10	SUDHA	24	10024	1	**4**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
11	ARULMOZHI	25	10240	1	5	0	0	0	0	0	1	0	0	0	0	0	1
12	REVATHI	25	10119	2	4	0	0	0	0	1	4	0	0	0	0	1	4
13	REKHA	22	10009	1	5	0	0	0	0	0	1	0	0	0	0	0	1
14	SAMUNDEESWARI	25	10838	1	4	0	0	0	0	0	1	**0**	0	0	0	0	1
15	RAMAYEE	25	10923	2	4	0	0	0	0	0	1	0	0	1	0	0	1
16	PRIYA	22	11085	1	3	0	0	0	0	1	4	0	0	0	0	1	4
17	ANJALI	24	11295	1	5	1	1	1	0	0	1	1	1	0	0	0	1
18	AMIRTHAM	24	11487	1	4	0	0	0	0	0	1	0	0	0	0	0	1
19	PARIMALA	24	11886	1	**4**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
20	DHANALAKSHMI	22	11682	1	3	0	0	0	0	1	4	0	0	0	0	1	4
21	AMUTHA	24	12364	1	4	0	0	0	0	0	1	0	0	0	1	0	0
22	JEYASHREE	22	13110	1	4	0	0	0	0	0	0	0	0	0	0	0	1
23	JEYANTHI	24	12180	1	4	0	0	0	0	1	4	0	0	0	0	1	4
24	KALPANA	22	13164	1	**4**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
25	SELVI	24	13185	1	5	0	0	0	0	1	4	0	0	0	0	1	4
26	TAMILSELVI	22	13238	1	4	0	0	0	0	0	1	0	0	0	0	0	1
27	REVATHI	21	13589	1	5	0	0	0	0	0	1	0	0	0	0	0	1
28	AMUTHA	24	13697	1	4	0	0	1	0	0	1	**3**	**3**	**3**	0	**3**	**3**
29	RENUKA	25	13789	1	4	0	0	0	0	1	4	0	0	0	0	1	4
30	RAMYA	22	13817	1	3	0	0	0	0	0	1	0	0	0	0	0	1

31	RAMA	22	13834	1	5	0	0	0	0	0	1	0	0	0	1	0	0
32	RADHIKA	24	13854	1	4	0	0	0	0	0	1	0	0	0	0	0	1
33	VIJAYALAKSHMI	21	13648	1	3	0	0	0	0	1	4	0	0	0	0	1	4
34	BHUVANESH	25	13798	1	**4**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
35	REVATHI	23	13868	1	5	0	0	0	0	0	1	1	0	0	0	0	1
36	SUMATHI	24	13906	1	4	0	0	0	1	0	0	3	3	3	0	3	3
37	PUGALMATHI	24	13913	1	4	0	0	1	0	1	4	**0**	**0**	**0**	0	**1**	**4**
38	MARIYAMM AL	27	13929	2	6	0	1	0	0	0	1	0	0	0	0	0	1
39	ALOCIYA	22	13804	1	5	0	0	0	0	1	4	0	0	0	0	1	4
40	INDIRA	23	14303	1	5	0	0	0	0	0	1	0	0	0	1	0	0
41	STHIYA	25	14412	2	4	0	0	0	0	1	4	0	0	0	0	1	4
42	MALLIKA	21	14497	1	**3**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
43	MEENAKCHI	24	14654	1	4	0	0	0	0	1	4	0	0	0	0	1	4
44	GAYATHRI	20	14709	1	4	0	0	0	0	0	1	0	1	0	0	0	1
45	GOVINDAMMAL	23	14947	1	4	0	0	0	0	1	4	0	0	0	0	1	4
46	KANNAGI	24	15105	1	**5**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
47	SONIA	21	15221	1	4	0	0	0	0	1	4	0	0	0	0	1	4
48	AMBIKA	23	15233	1	5	0	0	0	0	1	4	**3**	**3**	**3**	0	**3**	**3**
49	DEVI	24	15304	1	4	0	0	0	0	0	1	0	0	0	0	0	1
50	PARIMAL	25	15599	1	6	1	0	0	0	1	4	0	0	0	0	1	4
51	DEVI	21	15613	1	**3**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
52	JEYANTHI	25	15615	1	5	0	0	0	0	1	4	0	0	0	0	1	4
53	PREMALATHA	24	15976	1	4	0	1	0	0	0	1	0	0	0	1	0	0
54	ANJALAI	26	16286	2	4	0	0	0	0	1	4	1	0	1	0	1	4
55	SANGEETHA	24	16236	1	5	0	0	1	0	0	1	0	0	0	0	0	1
56	SOFIYA	24	16327	1	4	0	0	0	0	1	4	0	0	0	0	1	4
57	SAMUNDI	25	16417	2	4	0	0	0	0	0	1	**0**	**0**	**0**	0	**0**	**1**
58	DHANALAKSHMI	23	16530	1	5	1	0	0	0	1	4	0	0	0	0	1	4
59	KAMACHI	24	16600	1	4	0	0	0	1	0	0	3	3	3	0	3	3
60	GEETHA	24	16686	1	5	0	0	1	0	0	1	0	0	0	0	1	4
61	PONNNI	23	18742	1	4	0	0	0	0	1	4	0	0	0	0	1	4
62	DHANALAKSHMI	22	18721	1	**4**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
63	SANDHIYA	23	18929	1	5	0	0	0	0	1	4	0	0	0	0	1	4
64	KALA	20	19013	1	3	0	0	0	0	0	1	0	0	0	1	0	0
65	GOWRI	23	19230	1	4	1	1	0	0	1	4	0	0	0	0	1	4

66	SUDHA	24	19253	1	4	0	0	0	0	0	1	0	0	0	0	0	1
67	VANAJA	20	19415	1	4	0	0	0	0	1	4	0	0	0	0	1	4
68	NEELAVATHI	23	19319	1	5	0	0	1	0	0	1	**3**	**3**	**3**	0	**3**	**3**
69	GEETHA	25	19562	1	4	0	0	0	0	1	4	0	0	0	0	1	4
70	MANJULA	28	19657	2	**6**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
71	NANDHINI	22	19948	1	4	0	0	0	0	0	1	0	0	0	0	0	1
72	KALAIYARASI	25	19926	1	4	0	0	0	0	1	4	0	0	0	0	1	4
73	MAHESWARI	22	20105	1	**4**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
74	KOTTESWARI	26	20136	1	6	0	0	0	0	0	1	0	0	0	0	0	1
75	KALYANI	22	20434	1	4	0	0	0	0	1	4	0	0	0	0	1	4
76	SARANYA	22	20286	1	4	0	0	0	0	0	0	0	0	0	0	0	1
77	DEVI	19	20686	1	**3**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
78	MEENA	21	27736	1	4	1	1	0	0	1	4	1	0	0	0	1	4
79	KANNAIAMMAL	22	20823	1	4	0	0	1	0	0	1	0	0	0	1	0	0
80	SANGEETHA	23	21051	1	5	0	0	0	0	1	4	0	0	0	0	1	4
81	BHUVANA	19	20957	1	**3**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
82	BAVANI	21	21204	1	4	0	0	0	0	1	4	0	0	0	0	1	4
83	BANU	25	21314	2	5	0	0	0	0	0	1	**3**	**3**	**3**	0	**3**	**3**
84	MARY KRISTINA	22	21473	1	4	0	0	0	0	1	4	0	0	0	0	1	4
85	MAHALAKSHMI	25	21554	1	4	0	0	0	0	1	4	0	1	0	0	1	4
86	PATTU	21	21673	1	4	0	0	0	0	0	1	0	0	1	0	0	1
87	NATHIYA	23	21696	1	**4**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
88	SUDHA	24	21718	1	5	0	0	0	0	1	4	0	0	0	0	1	4
89	KALA	25	21975	2	6	0	0	0	0	0	1	0	0	0	0	0	1
90	POONGODI	22	22142	1	4	0	0	0	0	1	4	0	0	1	0	1	4
91	GAJALAKSHMI	21	22144	1	3	0	0	0	0	0	1	1	0	0	0	0	1
92	SHARMILA	23	22363	1	4	0	0	0	0	1	4	0	0	0	0	1	4
93	SATHYAPRIYA	25	22426	1	**5**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
94	NANDINI	20	22518	1	4	1	0	0	0	1	4	0	0	0	0	1	4
95	UMA	25	22711	1	4	0	0	1	0	0	1	**0**	**0**	**0**	1	**0**	**0**
96	SELVI	22	22856	1	3	0	0	0	1	0	0	3	3	3	0	3	3

97	NALINI	27	22406	1	5	0	0	0	0	1	4	0	0	0	0	1	4
98	MAHESWARI	26	22988	1	**4**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
99	JEYALAKSHMI	25	23196	1	4	0	0	0	0	0	1	0	0	0	0	0	1
100	JEGATHA	20	22643	1	3	0	0	0	0	1	4	0	0	0	0	1	4
101	DEVI	24	23195	1	**5**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
102	REVATHY	23	23345	1	4	0	0	0	0	0	1	0	0	0	0	0	1
103	KALPANA	24	23308	1	4	1	0	0	0	1	4	0	0	0	0	1	4
104	HEMALATHA	24	23560	1	4	0	0	0	0	0	1	0	0	0	0	0	1
105	ANJALAI	23	23528	1	4	0	1	0	0	0	1	0	0	0	0	0	1
106	KALAIVANI	24	23552	1	4	0	0	1	0	1	4	0	0	0	0	1	4
107	PADMAVATHY	25	23793	1	5	0	0	0	0	0	1	0	0	0	0	0	1
108	SARITHA	24	23906	1	**4**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
109	SATHIYA	24	24069	1	5	0	0	0	0	1	4	0	0	0	0	1	4
110	BHARATHI	21	22650	1	3	0	0	0	0	0	1	0	0	0	0	0	1
111	MALA	23	24032	1	4	0	0	0	0	1	4	0	0	0	0	1	4
112	MARIAMMAL	23	24052	1	4	0	0	0	0	0	1	0	0	0	1	0	0
113	LATHA	24	24296	1	**4**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
114	GOVITHAMMAL	23	24289	1	4	0	0	0	0	0	1	0	0	0	0	0	1
115	NISHA	26	23970	2	6	0	0	0	0	1	4	0	0	0	0	1	4
116	MALA	21	24266	1	3	0	0	0	0	0	1	0	0	0	0	0	1
117	ADHILAKSHMI	24	24235	1	**4**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
118	SARADHA	23	24353	1	4	0	0	0	0	0	1	0	0	0	0	0	1
119	RUBINI	22	24388	1	4	0	0	0	0	1	4	0	0	0	0	1	4
120	RENUKA	21	24842	1	3	0	0	1	0	0	1	0	0	0	0	0	1
121	LOGANAYAGI	21	24529	1	**4**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
122	SARALA	25	24586	1	5	0	0	0	0	1	4	0	0	0	0	1	4
123	REVATHI	22	24581	1	4	0	0	0	0	0	1	1	1	0	0	1	4
124	JHONCY	23	24476	1	4	1	0	0	0	0	1	0	0	0	0	0	1
125	FATHIMA	20	24646	1	**3**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
126	SELVI	23	24702	1	4	0	0	0	0	1	4	0	0	0	0	1	4
127	SANDHIYA	23	24691	1	4	0	0	0	0	0	1	0	0	1	0	0	1

128	MANIMEGALAI	26	24704	2	5	0	1	0	0	1	4	0	0	0	0	1	4
129	USHA	26	24689	2	**6**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
130	SUGANYA	21	24834	1	4	0	0	0	0	1	4	0	0	0	0	1	4
131	MEGALA	26	24831	2	4	0	0	0	0	0	1	0	0	0	0	0	1
132	SONIYA	20	24715	1	3	0	0	0	0	0	1	0	0	0	1	0	0
133	JEEVA	23	24814	1	**4**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
134	JEYALAKSHMI	26	24804	2	5	0	0	0	0	1	4	0	0	0	0	1	4
135	REVATHI	23	24882	1	4	0	0	0	0	0	1	0	0	0	0	0	1
136	RAJESWARI	25	24983	1	4	0	0	0	0	0	**1**	**0**	**0**	**0**	0	**0**	**1**
137	SUBHASHREE	21	24762	1	4	0	0	1	0	0	1	0	0	0	0	0	1
138	JERGIN	20	25000	1	4	0	0	0	1	0	0	3	3	3	0	3	3
139	VANITHA	25	25006	1	5	0	0	0	0	0	1	0	0	0	0	0	1
140	DEVI	26	25084	2	6	0	0	0	0	1	4	0	0	0	0	1	4
141	JAMUNA	22	25065	1	**4**	**3**	**3**	**3**	0	**3**	**3**	**3**	**3**	**3**	0	**3**	**3**
142	MAHALAKSHMI	24	25141	1	4	0	0	0	0	0	1	0	0	0	0	1	4
143	SULOCHANA	25	25109	1	5	0	0	0	0	0	1	0	0	0	0	0	1
144	SUMITHA	20	25228	1	4	0	0	0	0	0	1	0	0	0	0	0	1
145	NIROSHA	22	25221	1	4	0	0	0	0	0	1	1	0	0	0	0	1
146	KRISHNAVENI	22	25264	1	4	1	1	0	0	1	4	0	0	0	0	1	4
147	KALPANA	22	23550	1	4	0	0	0	0	0	1	0	0	0	0	0	1
148	KUSHBU	22	25116	1	4	0	0	0	0	0	1	**3**	**3**	**3**	0	**3**	**3**
149	MAHESWARI	26	25204	2	4	0	0	0	0	0	1	0	0	0	0	0	1
150	BHUVANESH	26	25358	2	4	0	0	0	0	0	1	**0**	**0**	**0**	0	**0**	**1**

GROUP B MASTER CHART

S.NO	NAME	AGE	IP NO	PARITY	EDUCATION	CRAMPS	Irregular menses	Excess white discharge	IUCD REMOVED	THREADS SEEN	IUCD on USG	CRAMPS	Irregular menses	Excess white discharge	IUCD REMOVED	THREADS SEEN	IUCD on USG
						At 6th week follow up						At 6th month follow up					
1	SHANMUGAPRIYA	24	6739	1	4	0	0	0	0	1	4	0	0	0	0	1	1
2	GEETHA	23	6949	1	4	0	0	0	0	1	4	0	0	0	0	1	1
3	SHENBAGAM	26	6962	2	6	0	0	0	0	1	4	0	0	0	0	1	1
4	REVATHI	24	8054	1	5	0	0	0	0	1	4	0	0	0	0	1	1
5	MYTHILI	25	9396	1	4	1	0	0	1	0	0	3	3	3	3	3	3
6	NATHIYA	19	9304	1	3	0	0	0	0	0	1	0	0	0	0	1	1
7	KANAGAMANI	22	9420	1	4	0	0	0	0	0	1	0	0	0	0	1	1
8	TAMILARASI	23	9725	1	5	3	3	3	3	3	3	3	3	3	3	3	3
9	NAYAGI	20	9776	1	3	0	0	0	0	1	4	0	0	0	0	1	1
10	SANGEETHA	24	9904	1	4	0	0	0	0	1	4	0	0	0	0	1	1
11	SASI	22	10140	1	4	0	1	0	0	1	4	0	0	1	0	1	1
12	DIVYA	25	10369	2	5	0	0	0	0	1	4	0	0	0	1	0	0
13	KAPAGAMVALLI	21	10556	1	4	0	0	0	0	1	4	0	0	0	0	1	1
14	JEYANTHI	22	10636	1	4	0	0	0	0	1	4	1	1	1	0	1	1
15	ABIRAMI	24	10960	1	5	0	0	0	0	1	4	0	0	0	0	1	1
16	ANBARASI	26	11282	2	6	0	0	0	0	1	4	0	0	0	0	1	1
17	RAJESWARI	19	11349	2	3	3	3	3	3	3	3	3	3	3	3	3	3
18	VANITHA	26	11761	2	5	0	0	0	0	1	4	0	0	0	0	0	1
19	AMMU	22	12181	1	4	0	0	0	0	1	4	0	0	0	0	1	1
20	SELVI	25	12637	1	2	0	0	1	0	0	1	0	0	0	0	1	1
21	ANJALAI	21	13089	1	4	0	0	0	0	1	4	3	3	3	3	3	3
22	ETTIYAMMAL	26	13172	2	5	0	0	0	0	1	4	0	0	0	0	1	1
23	RIHAANA	23	13249	1	4	3	3	3	3	3	3	3	3	3	3	3	3
24	TULASI	22	13559	1	4	0	0	0	0	1	4	0	0	0	0	1	1
25	INDUMATHY	20	13599	1	3	3	3	3	3	3	3	3	3	3	3	3	3
26	MYTHILI	24	13612	1	5	0	0	0	0	1	4	0	0	0	0	1	1
27	NANDHINI	20	13797	1	3	0	0	0	0	1	4	0	0	0	0	1	1
28	KARPAGAM	25	13813	1	5	1	1	1	0	1	4	0	0	0	0	0	1
29	ANJALACHI	20	13848	1	2	0	0	0	0	1	4	0	0	0	0	1	1
30	BHARATHI	23	13885	1	4	0	0	0	0	1	4	0	0	0	0	1	1

31	SHARMILA	23	13909	1	4	0	0	0	0	1	4	0	0	0	0	1	1
32	NEELAVATHI	24	13827	1	4	3	3	3	3	3	3	3	3	3	3	3	3
33	ADHI	24	13927	1	4	0	0	0	0	1	4	0	0	0	0	1	1
34	SUSILA	25	13863	2	3	0	0	0	0	1	4	0	0	0	0	1	1
35	INDHUMATHI	22	14133	1	4	0	0	0	0	1	4	3	3	3	3	3	3
36	PACHAIYAMMA	24	14330	1	5	1	0	0	0	1	4	1	0	0	0	1	1
37	LAKSHMI	23	14445	1	4	0	0	0	0	1	4	0	0	0	0	1	1
38	DEVI	26	14489	2	6	0	0	0	0	1	4	0	0	0	0	1	1
39	RASATHI	22	14719	1	4	3	3	3	3	3	3	3	3	3	3	3	3
40	DEIVANAI	24	14784	1	4	0	0	0	0	1	4	0	0	0	0	1	1
41	SHOBANA	20	14924	1	3	0	0	0	0	1	4	0	0	0	0	1	1
42	VALARMATHI	22	15108	1	4	0	0	1	0	1	4	0	0	0	0	1	1
43	MALAR	23	15243	1	4	0	0	0	0	1	4	0	0	0	0	1	0
44	KATTIYAMMA	24	15284	1	5	0	0	0	0	1	4	0	0	0	0	1	1
45	REVATHI	26	15456	2	4	3	3	3	3	3	3	3	3	3	3	3	3
46	HEMALATHA	27	15649	2	6	0	0	0	0	1	4	0	0	0	0	1	1
47	RANJITHA	21	15651	1	3	0	0	0	0	1	4	0	0	0	0	1	1
48	AMUL	24	15977	1	4	0	0	1	0	1	4	0	0	0	0	1	1
49	PRIYA	24	16184	1	4	0	0	0	1	0	0	3	3	3	3	3	3
50	SHENBAGAVALLI	23	16201	1	4	0	0	0	0	1	4	0	0	0	0	1	1
51	SUDHA	24	16373	1	5	0	0	0	0	0	1	0	0	0	0	1	1
52	NEELA	23	16519	1	4	0	0	1	0	1	4	0	0	0	0	1	1
53	USHA	24	16594	1	4	0	0	0	0	1	4	0	0	1	0	1	1
54	AMUTHA	25	17926	1	5	0	0	0	0	1	4	0	0	0	0	1	1
55	SUGASHREE	20	18757	1	3	3	3	3	3	3	3	3	3	3	3	3	3
56	REVATHI	24	18999	1	4	0	0	0	0	1	4	0	0	0	0	1	1
57	NITHYA	25	19122	1	4	0	0	0	0	1	4	0	0	0	0	1	1
58	PUSHPARANI	24	19294	1	5	1	0	0	0	1	4	1	0	0	0	1	1
59	SASIKALA	25	19447	1	4	0	0	0	0	1	4	0	0	0	0	1	1
60	DACHAYINI	23	19462	1	4	0	0	0	0	1	4	0	0	0	0	1	1
61	REVATHY	24	19432	1	5	0	0	0	0	1	4	0	0	0	0	0	1
62	REKHA	24	19721	1	4	0	0	0	0	1	4	0	0	0	0	1	1
63	ANNAMMAL	25	19722	1	4	0	0	0	0	1	4	0	0	0	0	1	1
64	DEIVAANI	20	19955	1	3	3	3	3	3	3	3	3	3	3	3	3	3
65	GOMATHI	24	19811	1	4	0	0	0	0	1	4	0	0	0	0	1	1

66	SONIA	25	20002	1	5	0	0	1	0	1	4	3	3	3	3	3	3
67	ANJALAI	22	20079	1	2	0	0	0	0	1	4	0	0	0	0	1	1
68	SANGEETHA	24	20162	1	4	0	0	0	0	1	4	0	0	0	0	1	1
69	GAYATHRI	21	20480	1	3	3	3	3	3	3	3	3	3	3	3	3	3
70	RADHIKA	21	20551	1	4	0	0	0	0	1	4	0	0	0	0	1	1
71	BHARATHI	25	20246	1	4	0	0	0	0	1	4	0	0	0	0	1	1
72	RAMYA	23	20575	1	4	3	3	3	3	3	3	3	3	3	3	3	3
73	SASIREKA	23	20902	1	5	0	0	0	0	1	4	0	0	0	0	1	1
74	SARASWATHI	22	20937	1	4	0	0	0	0	0	0	3	3	3	3	3	3
75	SHAMA	22	21205	1	2	0	1	0	0	1	4	0	0	0	0	1	1
76	CHITHRA	23	21218	1	4	0	0	0	0	1	4	0	0	0	0	1	1
77	ADHILAKSHMI	24	21262	1	5	1	0	0	0	1	4	0	0	0	0	1	1
78	AMBIKA	24	21404	1	5	0	0	0	0	1	4	0	0	0	0	1	1
79	SHOBANA	22	21458	1	4	3	3	3	3	3	3	3	3	3	3	3	3
80	SAVITHRI	22	21621	1	4	0	0	0	0	1	4	0	0	0	0	1	1
81	HEMAVATHI	27	21830	2	6	3	3	3	3	3	3	3	3	3	3	3	3
82	SUMITHRA	22	21898	1	4	0	0	0	0	1	4	0	0	0	0	1	1
83	SELVI	20	21953	1	3	0	0	0	0	1	4	0	0	0	0	1	1
84	SARASWATHI	24	21970	1	4	0	0	0	0	1	4	0	0	0	1	0	0
85	LAITHA	25	22131	1	5	0	0	0	0	1	4	0	0	0	0	1	1
86	PADMAVATHY	23	22149	1	4	0	0	0	0	1	4	0	0	0	0	1	1
87	MANIMEGALAI	27	22197	2	6	0	0	0	0	1	4	0	0	0	0	1	1
88	CHITHRA	21	22246	1	4	3	3	3	3	3	3	3	3	3	3	3	3
89	MALA	24	22284	1	4	0	0	0	0	1	4	0	0	0	0	1	1
90	SRIVIDHYA	25	22435	1	5	0	0	0	0	1	4	0	0	0	0	1	1
91	SARALA	25	22501	1	4	0	0	0	0	1	4	0	0	1	0	1	1
92	SARITHA	25	22664	1	4	3	3	3	3	3	3	3	3	3	3	3	3
93	KUMARI	26	22828	2	4	0	0	0	0	1	4	0	0	0	0	1	1
94	LAKSHMI	26	22845	1	5	0	0	0	0	1	4	0	0	0	0	1	1
95	SHENBAGAM	21	22920	1	3	0	0	1	0	1	4	0	0	0	0	0	1
96	RIHANA	24	22969	1	4	0	0	0	0	1	4	0	0	0	0	1	1

97	VIJALAKSHMI	24	22986	1	4	0	0	0	0	1	4	0	0	0	0	1	1
98	KAVITH	20	23105	1	2	0	0	0	0	1	4	0	0	0	0	1	1
99	ANJALAI	24	23289	1	4	0	0	0	0	1	4	0	0	0	1	0	0
100	SHENBAGAVALLI	23	23837	1	4	0	0	0	0	1	4	0	0	0	0	1	1
101	RADHIKA	23	23312	1	4	0	0	0	0	1	4	0	0	0	0	1	1
102	KALPANA	25	23407	1	4	0	0	0	0	1	4	0	0	0	0	1	1
103	NAGAVALLI	25	23529	1	4	0	0	1	0	1	4	0	0	0	0	1	1
104	KALAIVANI	21	23552	1	2	0	0	0	0	1	4	0	0	0	0	1	1
105	AISHWARIYA	22	23151	1	4	3	3	3	3	3	3	3	3	3	3	3	3
106	JESSEY SANDHIYA	25	23964	1	5	1	1	1	0	1	4	0	0	0	0	1	1
107	VASANTHA	21	24068	1	4	0	0	0	0	1	4	1	1	1	0	1	1
108	KAMALA	25	23475	1	4	3	3	3	3	3	3	3	3	3	3	3	3
109	JANAKI	21	24040	1	4	0	0	0	0	1	4	0	0	0	0	1	1
110	SIVALAKSHMI	21	24105	1	3	0	0	0	0	1	4	0	0	0	0	1	1
111	PADMAVATHY	25	23307	1	4	0	0	0	0	1	4	0	0	0	0	1	1
112	VIJAYALAKSHMI	21	24288	1	5	0	0	0	0	1	4	0	0	0	0	1	0
113	RITA	25	24192	1	5	0	0	0	0	1	4	0	0	0	0	1	1
114	BHAVANI	24	24212	1	4	3	3	3	3	3	3	3	3	3	3	3	3
115	LATHA	21	24296	1	2	0	0	0	0	1	4	0	0	0	0	1	1
116	KASTHURI	21	24320	1	5	0	0	1	0	1	4	0	0	0	0	0	1
117	SUMATHI	26	24366	2	6	0	0	0	0	1	4	0	0	0	0	1	1
118	VIJAYALAKSHMI	21	24533	1	4	0	0	0	0	1	4	0	0	0	0	1	1
119	JEYANTHI	24	24579	1	4	3	3	3	3	3	3	3	3	3	3	3	3
120	HEMAMALINI	22	24541	1	4	0	0	0	0	1	4	0	0	0	0	1	1
121	AMIRTHAM	20	24439	1	2	0	0	0	0	1	4	0	0	0	0	1	1
122	BANUPRIYA	22	23850	1	4	0	0	0	0	1	4	0	0	0	0	1	1
123	SUDHA	24	24657	1	5	3	3	3	3	3	3	3	3	3	3	3	3
124	SUGANTHI	23	24675	1	4	0	0	0	0	1	4	0	0	0	0	1	1
125	INDHIRA	22	24754	1	4	1	0	0	0	1	4	0	0	0	0	1	1
126	NANDHINI	21	24744	1	4	0	0	0	0	1	4	0	0	0	0	1	1
127	RUBINI	20	24661	1	2	3	3	3	3	3	3	3	3	3	3	3	3

128	VASANTHA	25	24703	1	5	0	0	0	0	1	4	0	0	0	0	1	1
129	MANJULA	22	24702	1	4	0	0	0	0	1	4	0	0	0	0	1	1
130	JESINTHA	28	24789	2	6	0	0	0	0	1	4	0	0	0	1	0	0
131	PARAMESWARI	22	24914	1	4	0	0	1	0	1	4	0	0	0	0	1	1
132	NADHIYA	23	24859	1	4	0	0	0	0	1	4	0	0	0	0	1	1
133	LAKSHMI	20	24852	1	2	0	0	0	0	1	4	0	0	0	0	1	1
134	SANGEETHA	21	24984	1	3	3	3	3	3	3	3	3	3	3	3	3	3
135	ALAMELU	23	24869	1	5	0	0	0	0	1	4	0	0	0	0	1	1
136	BANUPRIYA	22	23850	1	4	3	3	3	3	3	3	3	3	3	3	3	3
137	NEELA	22	25080	1	4	0	0	0	0	1	4	0	0	0	0	1	1
138	SHANTH	23	25011	1	4	0	0	0	0	1	4	0	0	0	0	1	1
139	ANUSHYA	25	25112	1	5	0	0	0	0	1	4	0	0	0	0	1	1
140	INDHUMATHI	25	25054	1	5	0	0	1	0	1	4	0	0	0	0	1	1
141	POONGODI	24	25146	1	4	3	3	3	3	3	3	3	3	3	3	3	3
142	SANGEETHA	24	25220	1	4	0	0	0	1	0	0	3	3	1	3	3	3
143	GOWRI	26	24962	2	4	0	0	0	0	1	4	0	0	0	0	1	1
144	KAVITHA	26	24290	2	6	3	3	3	3	3	3	3	3	3	3	3	3
145	ANITHA	21	25296	1	2	1	0	0	0	1	4	0	0	0	0	1	1
146	REVATHI	25	25197	1	4	3	3	3	3	3	3	3	3	3	3	3	3
147	SIVARANJANI	20	25372	1	4	0	0	0	0	0	0	3	3	3	3	3	3
148	LALITHA	23	25400	1	4	0	0	0	0	1	4	3	3	3	3	3	3
149	AMBIGA	24	25415	1	4	0	0	0	0	1	4	3	3	3	3	3	3
150	SUDHA	24	25484	1	5	3	3	3	3	3	3	3	3	3	3	3	3

KEYS FOR MASTER CHART

AGE	GROUP
18-20	1
21-25	2
26-30	3
>30	4

EDUCATION STATUS	GROUP
ILLITRATE	1
PRIMARY SCHOOL	2
MID SCHOOL	3
HIGHER SECONDARY SCHOOL	4
DIPLOMA	5
DEGREE/ GRADUATE	6

MENSTRUAL IRREGULARITIES	GROUP
YES	1
NO	0
LOST FOLLOW UP	3

PARITY	GROUP
PRIMI	1
SECOND	2

CRAMP	GROUP
YES	1
NO	0
LOST FOLLOW UP	3

IUCD REMOVED	GROUP
YES	1
NO	0
LOST FOLLOW UP	*3*

IUCD ON USG	GROUP
YES	1
NO	0
NOT DONE	4
LOST FOLLOW UP	3

EXCESSIVE VAGINAL DISCHARGE	GROUP
YES	1
NO	0
LOST FOLLOW UP	3

THREADS SEEN	GROUP
YES	1
NO	0
LOST FOLLOW UP	3

ABBREVIATIONS

CDC- Centre for Disease Control and prevention.

CPR- Couple protection rate.

CU T- Copper T.

ESR-Erythrocyte sedimentation rate

IUCD-Intra uterine contraceptive devices.

LAM- Lactational Amenorrhea Method.

MEC-Medical eligibility criteria.

NSAIDS- Non steroidal anti-inflammatory drug.

P/S- Per Speculum

P/V- Per vaginum.

PID- Pelvic inflammatory disease.

PPIUCD- Postpartum intrauterine device.

ROM- Rupture of membrane.

USG- Ultrasonogram.

WBC- White blood cells

WHO- World health organisation.